



THE IMPERIAL ENCYCLOPEDIA AND DICTIONARY

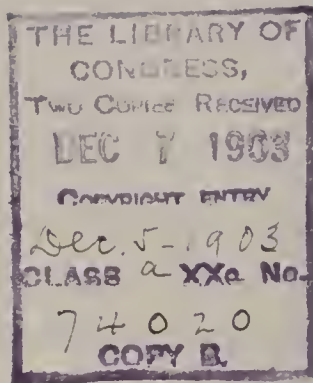
A LIBRARY OF UNIVERSAL
KNOWLEDGE AND AN UN-
ABRIDGED DICTIONARY OF
THE ENGLISH LANGUAGE
UNDER ONE ALPHABET

IN FORTY VOLUMES

VOLUME 23
MACKENZIE—MERCURY

NEW YORK HENRY G. ALLEN & COMPANY

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RECEIVED JAN

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SCHEME OF SOUND SYMBOLS

FOR THE PRONUNCIATION OF WORDS.

Note.—(·) is the mark dividing words respelt phonetically into syllables: (ˈ), the accent indicating on which syllable or syllables the accent or stress of the voice is to be placed.

Sound-symbols employed in Respelling.	Representing the Sounds as exemplified in the Words.	Words respelt with Sound-symbols and Marks for Pronunciation.
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<i>ā</i> ...	mate, fate, fail, aye.....	<i>māt, fāt, fāl, ā.</i>
<i>ă</i> ...	mat, fat.....	<i>măt, făt.</i>
<i>â</i> ...	far, calm, father.....	<i>fâr, kâm, fâ'thēr.</i>
<i>ä</i> ...	care, fair.....	<i>câr, fâr.</i>
<i>aw</i> ...	fall, laud, law.....	<i>fawl, lawd, law.</i>
<i>ē</i> ...	mete, meat, feet, free.....	<i>mēt, mêt, fêt, frê.</i>
<i>ě</i> ...	met, bed.....	<i>mêt, bĕd.</i>
<i>é</i> ...	her, stir, heard, cur.....	<i>hēr, stēr, hĕrd, kēr.</i>
<i>ī</i> ...	pine, ply, height.....	<i>pīn, plī, hīt.</i>
<i>ĩ</i> ...	pin, nymph, ability.....	<i>pĭn, nĭmf, ă-bĭl'ĩ-tĭ.</i>
<i>ō</i> ...	note, toll, soul.....	<i>nōt, tōl, sōl.</i>
<i>ö</i> ...	not, plot.....	<i>nōt, plōt.</i>
<i>ô</i> ...	move, smooth.....	<i>mōv, smōth.</i>
<i>ö</i> ...	Goethe (similar to <i>e</i> in her)...	<i>gō'téh.</i>
<i>ow</i> ...	noun, bough, cow.....	<i>noun, bow, kow.</i>
<i>oy</i> ...	boy, boil.....	<i>boy, boyl.</i>
<i>û</i> ...	pure, dew, few.....	<i>pūr, dū, fū.</i>
<i>ũ</i> ...	bud, come, tough.....	<i>bŭd, kŭm, tŭf.</i>
<i>ú</i> ...	full, push, good.....	<i>fŭl, pŭsh, gŭd.</i>
<i>ü</i> ...	French plume, Scotch guid.....	<i>plŭm, gŭd.</i>
<i>ch</i> ...	chair, match.....	<i>chär, mäch.</i>
<i>ch</i> ...	German buch, Heidelberg,	
	Scotch loch (guttural).....	<i>bôch, hĭ'del-bĕrch, löch.</i>
<i>g</i> ...	game, go, gun.....	<i>gām, gō, gŭn.</i>
<i>j</i> ...	judge, gem, gin.....	<i>jŭj, jĕm, jĭn.</i>
<i>k</i> ...	king, cat, cot, cut.....	<i>kĭng, kăt, kōt, kŭt.</i>
<i>s</i> ...	sit, scene, cell, city, cypress.....	<i>sĭt, sĕn, sĕl, sĭt'ĭ, sĭ'prĕs.</i>
<i>sh</i> ...	shun, ambition.....	<i>shŭn, ăm-bĭsh'ŭn.</i>
<i>th</i> ...	thing, breath.....	<i>thĭng, brĕth.</i>
<i>th</i> ...	though, breathe.....	<i>thō, brĕth.</i>
<i>z</i> ...	zeal, maze, muse.....	<i>zĕl, māz, mŭz.</i>
<i>zh</i> ...	azure, vision.....	<i>ăzh'ēr, vĭzh'ŭn.</i>

ABBREVIATIONS USED IN THIS WORK.

a., or adj......adjective
A.B......Bachelor of Arts
abbr......abbreviation, abbreviated
abl. or abla.ablative
Abp......Archbishop
abt......about
Acad......Academy
acc. or ac.accusative
accom......accommodated, accommodation
act......active
A.D......in the year of our Lord [*Anno Domini*]
Adj......Adjutant
Adm......Admiral
adv. or ad.adverb
A. F......Anglo-French
Ag......Silver [*Argentum*]
agri......agriculture
A. L......Anglo-Latin
Al......Aluminium
Ala......Alabama
Alb......Albanian
alg......algebra
A.M......before noon [*ante meridiem*]
A.M......Master of Arts
Am......Amos
Amer......America, -n
anat......anatomy, anatomical
anc......ancient, anciently
AN. M......in the year of the world [*Anno Mundi*]
anon......anonymous
antiq......antiquity, antiquities
aor......aorist, -ic
app......appendix
appar......apparently
Apr......April
Ar......Arabic
arch......architecture
archæol......archæology
arith......arithmetic
Ariz......Arizona
Ark......Arkansas
art......article
artil......artillery
AS......Anglo-Saxon
As......Arsenic
Assoc......Association
asst......assistant
astrol......astrology
astron......astronomy
attrib......attributive
atty......attorney
at. wt......atomic weight
Au......Gold [*Aurum*]

A.U.C......in the year of the building of the city (Rome) [*Annourbis conditæ*]
Aug......August
aug......augmentative
Aust......Austrian
A. V......authorized version [of Bible, 1611]
avoir......avoirdupois
B......Boron
B......Britannic
b......born
Ba......Barium
Bart......Baronet
Bav......Bavarian
bl.; bbl......barrel; barrels
B.C......before Christ
B.C.L......Bachelor of Civil Law
B.D......Bachelor of Divinity
bef......before
Belg......Belgic
Beng......Bengali
Bi......Bismuth
biog......biography, biographical
biol......biology
B.L......Bachelor of Laws
Bohem......Bohemian
bot......botany, botanical
Bp......Bishop
Br......Bromine
Braz......Brazilian
Bret......Breton
Brig......Brigadier
Brit......British, Britannica
bro......brother
Bulg......Bulgarian
bush......bushel, bushels
C......Carbon
c......century
Ca......Calcium
Cal......California
Camb......Cambridge
Can......Canada
Cant......Canterbury
cap......capital
Capt......Captain
Card......Cardinal
carp......carpentry
Cath......Catholic
caus......causative
cav......cavalry
Cd......Cadmium
Ce......Cerium
Celt......Celtic
cent......central
cf......compare [*confer*]
ch or chh......church

ABBREVIATIONS.

Chal.....	Chaldee	diff.....	different, difference
chap.....	chapter	dim.....	diminutive
chem.....	chemistry, chemical	dist... ..	district
Chin.....	Chinese	distrib..	distributive
Chron.....	Chronicles	div.....	division
chron.....	chronology	doz.....	dozen
Cl.....	Chlorine	Dr.....	Doctor
Class.....	Classical [= Greek and Latin]	dr.....	dram, drams
Co.....	Cobalt	dram.....	dramatic
Co... ..	Company	Dut. or D...	Dutch
co.....	county	dwt	pennyweight
cog.....	cognate [with]	dynam or	
Col.....	Colonel	dyn.....	dynamics
Col	Colossians	E.....	Erbium
Coll.....	College	E. or e.....	East, -ern, -ward
colloq.....	colloquial	E. or Eng..	English
Colo.....	Colorado	Eccl.....	Ecclesiastes
Com.....	Commodore	eccl. or ..	ecclesiastical [af-
com.....	commerce, commer-	eccles....	fairs]
	cial	ed	edited, edition, edi-
com.....	common		tor
comp.....	compare	e.g.....	for example [ex
comp	composition, cem-		gratia]
	pound	E. Ind. or {	East Indies, East
compar....	comparative	E. I. }	Indian
conch.....	conchology	elect.....	electricity
cong.....	congress	Emp..	Emperor
Congl.....	Congregational	Encyc.....	Encyclopedia
conj.	conjunction	Eng. or E..	English
Conn or Ct.	Connecticut	engin.....	engineering
contr.....	contraction, con-	entom ..	entomology
	tracted	env. ext....	envoy extraordinary
Cop.....	Coptic	ep.....	epistle
Cor.....	Corinthians	Eph.....	Ephesians
Corn.....	Cornish	Episc	Episcopal
corr.....	corresponding	eq. or =...	equal, equals
Cr	Chromium	equiv.....	equivalent
crystal.....	crystallography	esp.....	especially
Cs	Cæsium	Est	Esther
ct.....	cent	estab.....	established
Ct. or Conn.	Connecticut	Esthon....	Esthonian
Cu.....	Copper [Cuprum]	etc.....	and others like [et
cwt	a hundred weight		cetera]
Cyc.....	Cyclopedia	Eth.....	Ethiopic
D.....	Didymium	ethnog....	ethnography
D. or Dat..	Dutch	ethnol.....	ethnology
d.....	died	et seq.....	and the following
d. [l. s. d.]	penny, pence		[et sequentia]
Dan.....	Daniel	etym.....	etymology
Dan.....	Danish	Eur.....	European
dat	dative	Ex.....	Exodus
dau.....	daughter	exclam ...	exclamation
D. C.....	District of Columbia	Ezek.....	Ezekiel
D.C.L.....	Doctor of Civil [or	Ezr.....	Ezra
	Common] Law	F.....	Fluorine
D.D.....	Doctor of Divinity	F. or Fahr.	Fahrenheit
Dec.....	December	f. or fem...	feminine
dec.....	declension	F. or Fr...	French
def.....	definite, definition	fa.....	father
deg	degree, degrees	Fahr. or F.	Fahrenheit
Del.....	Delaware	far.....	farriery
del.....	delegate, delegates	Fe.....	Iron [Ferrum]
dem.....	democratic	Feb.....	February
dep.....	deputy	fem or f. .	feminine
dep.....	deponent	fig.....	figure, figuratively
dept.....	department	Fin.....	Finnish
deriv.....	derivation, deriva-	F. -L.....	French from Latin
	tive	Fla.....	Florida
Deut.....	Deuteronomy	Flem.....	Flemish
dial.	dialect, dialectal	for.....	foreign
diam ..	diameter	fort.....	fortification
Dic.....	Dictionary	Fr. or F..	French
		fr.....	from

ABBREVIATIONS.

freq	frequentative	ind.....	indicative
Fris	Frisian	indef	indefinite
ft.....	foot, feet	Indo-Eur...	Indo-European
fut.....	future	inf.....	infantry
G. or Ger...	German	inf or infin.	infinitive
G.....	Glucinium	instr.....	instrument, -al
Ga.....	Gallium	int... ..	interest
Ga.....	Georgia	intens.....	intensive
Gael	Gaelic	interj. or	
Gal	Galatians	ipt.....	interjection
gal.....	gallon	interrog...	interrogative pro-
galv.....	galvanism, galvanic	noun	
gard.....	gardening	intr. or	
gen.....	gender	intrans...	intransitive
Gen.....	General	Io.....	Iowa
Gen	Genesis	Ir.....	Iridium
gen.....	genitive	Ir.....	Irish
Geno.....	Genoese	Iran.....	Iranian
geog	geography	irr	irregular, -ly
geol.....	geology	Is.....	Isaiah
geom.....	geometry	It.....	Italian
Ger.....	Gernian, Germany	Jan.....	January
Goth.....	Gothic	Jap.....	Japanese
Gov.....	Governor	Jas.....	James
govt.....	government	Jer.....	Jeremiah
Gr.....	Grand, Great	Jn.....	John
Gr.....	Greek	Josh.....	Joshua
gr.....	grain, grains	Jr.....	Junior
gram	grammar	Judg	Judges
Gr. Brit...	Great Britain	K.....	Potassium [<i>Kallum</i>]
Gris.....	Grisons	K.....	Kings [in Bible]
gun	gunnery	K.....	king
H.....	Hegira	Kan.....	Kansas
H.....	Hydrogen	Kt.....	Knight
h.....	hour, hours	Ky.....	Kentucky
Hab.....	Habakkuk	L.....	Latin
Hag.....	Haggai	L.....	Lithium
H. B. M....	His [or Her] Britan- nic Majesty	l. [l. s. d.],	{ pound, pounds
Heb.....	Hebrew, Hebrews	or £.....	{ [sterling]
her.....	heraldry	La.....	Lanthanum
herpet.....	herpetology	La.....	Louisiana
Hg.....	Mercury [<i>Hydrar- gyrum</i>]	Lam.....	Lamentations
hhd.....	hogshead, hogsheads	Lang.....	Languedoc
Hind.....	Hindustani, Hindu, or Hindi	lang.....	language
hist	history, historical	Lap.....	Lapland
Hon	Honorable	lat	latitude
hort.....	horticulture	lb.; llb. or	{ pound ; pounds
Hos.....	Hosea	lbs.....	{ [weight]
Hung.....	Hungarian	Let.....	Lettish
Hydros....	Hydrostatics	Lev.....	Leviticus
I.....	Iodine	LG.....	Low German
I.; Is.....	Island ; Islands	L.H.D.....	Doctor of Polite Lit- erature
Icel.....	Icelandic	Lieut.....	Lieutenant
ichth.....	ichthyology	Lim	Limousin
Ida.....	Idaho	Lin	Linnæus, Linnæan
i.e.....	that is [<i>id est</i>]	lit	literal, -ly
Ill.....	Illinois	lit	literature
illus.....	illustration	Lith.....	Lithuanian
Impera or		lithog.....	lithograph, -y
impr.....	imperative	LL.....	Late Latin, Low Latin
impers.....	impersonal	LL.D.....	Doctor of Laws
impf or imp.	imperfect	long.....	longitude
impf. p. or		Luth.....	Lutheran
imp	imperfect participle	M.....	Middle
improp.....	improperly	M.....	Monsieur
In.....	Indium	m.....	mile, miles
in... ..	inch, inches	m.Or masc.	masculine
incept.....	inceptive	M.A.....	Master of Arts
Ind	India, Indian	Macc.	Maccabees
Ind	Indiana	mach... ..	machinery
		Mag.....	Magazine

ABBREVIATIONS.

Maj	Major	N. A., or	
Mal	Malachi	N. Amer.	North America, -n
Mal	Malay, Malayan	nat	natural
manuf.	manufacturing, manufacturers	naut.	nautical
Mar.	March	nav.	navigation, naval af- fairs
masc or m.	masculine	Nb.	Niobium
Mass	Massachusetts	N. C. or	
math	mathematics, math- ematical	N. Car...	North Carolina
Matt.	Matthew	N. D.	North Dakota
M.D.	Doctor of Medicine	Neb	Nebraska
MD.	Middle Dutch	neg.	negative
Md	Maryland	Neh	Nehemiah
ME.	Middle English, or Old English	N. Eng.	New England
Me	Maine	neut or n...	neuter
mech.	mechanics, mechani- cal	Nev.	Nevada
med	medicine, medical	N.Gr.	New Greek, Modern Greek
mem	member	N. H	New Hampshire
mensur...	mensuration	NHG.	New High German [German]
Messrs. or		Ni ...	Nickel
MM	Gentlemen, Sirs	N. J.	New Jersey
metal	metallurgy	NL	New Latin, Modern Latin
metaph...	metaphysics, meta- physical	N. Mex.	New Mexico
metcor....	meteorology	N. T., or	
Meth	Methodist	N. Test...	New Testament
Mex.	Mexican	N. Y.	New York [State]
Mg	Magnesium	nom	nominate
M.Gr	Middle Greek	Norm. F ..	Norman French
MHG	Middle High Ger- man	North. E ..	Northern English
Mic.	Micah	Norw.	Norwegian, Norse
Mich	Michigan	Nov	November
mid	middle [voice]	Num.	Numbers
Milan	Milanese	numis	numismatics
mid. L. or }	Middle Latin, Me-	O	Ohio
ML. }	diæval Latin	O	Old
milit. or		O	Oxygen
mil.	military [affairs]	Obad.	Obadiah
min	minute, minutes	obj.	objective
mineral....	mineralogy	obs. or †...	obsolete
Minn	Minnesota	obsoles ..	obsolescent
Min. Plen..	Minister Plenipoten- tiary	O.Bulg.	Old Bulgarian or Old Slavic
Miss	Mississippi	Oct.	October
ML. or }	Middle Latin, Me-	Odontog...	odontology
mid. L. ... }	diæval Latin	OE	Old English
MLG.	Middle Low German.	OF or	
Mlle	Mademoiselle	O. Fr....	Old French
Mme	Madam	OHG.	Old High German
Mn	Manganese	Ont.	Ontario
Mo.	Missouri	opt ..	optics, optical
Mo.	Molybdenum	Or.	Oregon
mod	modern	ord	order
Mont	Montana	ord....	ordnance
Mr.	Master [Mister]	org.	organic
Mrs.	Mistress [Missis]	orig.	original. -ly
MS.; MSS.	manuscript; manu- scripts	ornith....	ornithology
Mt.	Mount, mountain	Os	Osmium
mus	music	OS.	Old Saxon
MUS.DOC...	Doctor of Music	O. T., or	
myth	mythology, mytho- logical	O. Test...	Old Testament
N.	Nitrogen	Oxf.	Oxford
N. or n.	North, -ern, -ward	oz.	ounce, ounces
n'	noun	P.	Phosphorus
n or neut..	neuter	p.; pp.	page; pages
Na	Sodium [Natrium]	p., or part..	participle
Nah.	Nahum	Pa. or Penn.	Pennsylvania
		paint	painting
		palæon....	palæontology
		parl	parliament
		pass.	passive

ABBREVIATIONS.

pathol or
 path.....pathology
 Pb.....Lead [*Plumbum*]
 Pd.....Palladium
 Penn or Pa. Pennsylvania
 perf.....perfect
 perh.....perhaps
 Pers.....Persian, Persic
 pers.....person
 persp.....perspective
 pert.....pertaining [to]
 Pet.....Peter
 Pg. or Port. Portuguese
 phar.....pharmacy
 PH.D.....Doctor of Philoso-
 phy
 Phen.....Phenician
 Phil.....Philippians
 Philem.....Philemon
 philol.philology, philologi-
 cal
 philos. { philosophy, philo-
 or phil... } sophical
 phonog....photography
 photog....photography
 phren.....phrenology
 phys.....physics, physical
 physiol....physiology, physi-
 ological
 Pied.....Piedmontese
 Pl.....Plate
 pl. or plu...plural
 Pl. D.....Platt Deutsch
 plupf.....pluperfect
 P.M.....afternoon [*post meri-*
 diem]
 pneum.....pneumatics
 P. O.....Post-office
 poet.....poetical
 Pol.....Polish
 pol econ...political economy
 polit.....politics, political
 pop... ..population
 Port. or Pg. Portuguese
 poss.....possessive
 pp.....pages
 pp.....past participle, per-
 fect participle
 p. pr.....present participle
 Pr. or Prov. Provençal
 pref.....prefix
 prep.....preposition
 Pres.....President
 pres.....present
 Presb.....Presbyterian
 pret.....preterit
 prim.....primitive
 priv.....privative
 prob.....probably, probable
 Prof.....Professor
 pron.....pronoun
 pron.....pronunciation, pro-
 nounced
 prop.....properly
 pros.....prosody
 Prot..Protestant
 Prov. or Pr. Provençal
 Prov.....Proverbs
 prov.....province, provincial
 Prov. Eng.. Provincial English
 Prus.....Prussia, -n
 Ps.....Psalm, Psalms
 psychol....psychology

pt.....past tense
 pt.....pint
 Pt.....Platinum
 pub.....published, publisher,
 publication
 pwt.....pennyweight
 Q.....Quebec
 qt.....quart
 qtr.....quarter [weight]
 qu.....query
 q.v.....which see [*quod*
 vide]
 R.....Rhodium
 R.....River
 Rb.....Rubidium
 R. Cath....Roman Catholic
 rec. sec....recording secretary
 Ref.....Reformed
 refl.....reflex
 reg.....regular, -ly
 regt.....regiment
 rel. pro. or
 rel.....relative pronoun
 repr.....representing
 repub.....republican
 Rev.....Revelation
 Rev.....Reverend
 Rev. V.....Revised Version
 rhet.....rhetoric, -al
 R. I.....Rhode Island
 R. N.....Royal Navy
 Rom.....Roman, Romans
 Rom.....Romanic or Ro-
 mance
 Rom. Cath. { Roman Catholic
 Ch. or R. }
 C. Ch.... } Church
 r.r.....railroad
 Rt. Rev...Right Reverend
 Ru.....Ruthenium
 Russ.....Russian
 r.w.....railway
 S.....Saxon
 S.....Sulphur
 s.....second, seconds
 s. [l. s. d.]..shilling, shillings
 S. or s.....South, -ern, -ward
 S. A. or
 S. Amer..South America, -n
 Sam.....Samaritan
 Sam.....Samuel
 Sans, or
 Skr.....Sanskrit
 Sb.....Antimony [*Stibium*]
 s.c.....understand, supply,
 namely [*scilicet*]
 S. C. or
 S. Car....South Carolina
 Scand.....Scandinavian
 Scot.....Scotland, Scotch
 scr.....scruple, scruples
 Scrip.....Scripture [s], Scrip-
 tural
 sculp.....sculpture
 S. D.....South Dakot
 Se.....Selenium
 sec.... ..secretary
 sec.....section
 Sem.....Semitic
 Sep.....September
 Serv.....Servian
 Shaks.....Shakespear
 Si.....Silicon

ABBREVIATIONS.

Sic.....	Sicilian	trigon.....	trigonometry
sing.....	singular	Turk.....	Turkish
sis.....	sister	typog.....	typography, typo- graphical
Skr or'		U.....	Uranium
Sans.....	Sanskrit	ult.....	ultimate, -ly
Slav.....	Slavonic, Slavic	Unit.....	Unitarian
Sn.....	Tin [<i>Stannum</i>]	Univ.....	Universalist
Soc.....	Society	Univ.....	University
Song Sol...	Song of Solomon	U. Presb...	United Presbyterian
Sp.....	Spanish	U. S... ..	United States
sp. gr.....	specific gravity	U. S. A....	United States Army
sq.....	square	U. S. N....	United States Navy
Sr.....	Senior	Ut.....	Utah
Sr.....	Strontium	V.....	Vanadium
St.: Ste....	Saint	v.....	verb
st.	street	Va.....	Virginia
stat.....	statute	var.....	variant [word]
s.T.D.....	Doctor of Sacred Theology	var.....	variety of [species]
subj.....	subjunctive	Ven.....	Venerable
suf.....	suffix	Venet.....	Venetian
Su. Goth...	Suo-Gothic	vet....	veterinary
superl.....	superlative	v. i. or	
Supp.....	Supplement	v. intr....	verb intransitive
Supt	Superintendent	vil.....	village
surg.....	surgery, surgical	viz.....	namely, to-wit [<i>vide-</i> <i>licet</i>]
Surv.....	surveying	v. n.....	verb neuter
Sw.....	Swedish	voc	vocative
Swab.....	Swabian	vol..	volume
sym.....	symbol	vols.....	volunteers
syn.....	synonym, -y	Vt.....	Vermont
Syr.....	Syriac, Syrian	v. tr.....	verb transitive
t	town	W.....	Tungsten [<i>Wolfram</i>]
Ta... ..	Tantalum	W	Welsh
Tart.....	Tartar	W. or w....	West, -ern, -ward
Te.....	Tellurium	Wal	Walachian
technol ...	technology	Wall.....	Wailoon
teleg.....	telegraphy	Wash.....	Washington
Tenn.....	Tennessee	Westph....	Westphalia, -n
term.....	termination	W. Ind. }	West Indies, West
terr.....	territory	or W. I... }	Indian
Teut.....	Teutonic	Wis.....	Wisconsin
Tex.....	Texas	wt.....	weight
Th.....	Thorium	W. Va.....	West Virginia
theat.....	theatrical	Wyo.....	Wyoming
theol.....	theology, theological	Y.....	Yttrium
therap....	therapeutics	yd.....	yard
Thess.....	Thessalonians	yr.....	year
Ti.....	Titanium	Zech.....	Zechariah
Tim.....	Timothy	Zeph.....	Zephaniah
Tit.....	Titus	Zn.....	Zinc
Tl.....	Thallium	zool.....	zoology, zoological
toxicol....	toxicology	Zr.....	Zirconium
tp.....	township		
tr. or trans.	transitive		
transl.....	translation, trans- lated		

See also ABBREVIATIONS: in Vol. I.

IMPERIAL ENCYCLOPEDIA AND DICTIONARY.

MACKEN'ZIE, RANALD SLIDELL: 1840, July 27—1889, Jan. 19; b. Westchester co., N. Y. In 1862 he graduated at West Point and was appointed to the engineer corps; was brevetted 1st lieut. for bravery at Manassas where he was wounded; 1863, Mar. 3, was commissioned 1st lieut.; brevetted capt. at Chancellorsville, and major at Gettysburg. 1863, Nov. 6, he was made capt.; 1864, June 18, brevetted lieut.col.; col. of the regular army, Oct., for bravery at Cedar Creek; and brig.gen. of vols. for services at Opequan and other places in Virginia. He was brevetted brig.gen. in the regular army and maj.gen. of vols. 1865, Mar. Besides service on many battlefields, he was engaged in building bridges, repairing roads, constructing forts, rifle-trenches, and other engineering work. 1867, Mar. 6, he was made col. of infantry; and 1882, Oct. 22, brig.gen. 1884, Mar. 24, he was placed on the retired list, having been disabled in the line of duty.

MACKEN'ZIE RIVER: important river of the Dominion of Canada, discovered and navigated first by Alexander Mackenzie—from whom it derives its name—in 1789. It has its source under the name *Athabasca River* (q.v.), in Mount Brown, and after a n.n.e. course of 687 m. falls into Lake Athabasca. Emerging from this lake as the *Slave river*, it receives the Peace river, and after a further course of 210 m. falls into Great Slave Lake (q.v.). It now assumes the name of M. R., and conveys the waters of the Great Slave Lake to the Arctic Ocean at Mackenzie Bay, through a final course of 876 m., making a total of 1,773 m. In many places it is more than a mile in width, and it is navigable for steamboats throughout the greater part of its course from Great Slave Lake. There is only one obstruction, and that not a material one, near Fort Hope, lat. about 66° n. Its chief affluent is the Liard, which rises on the w. side of the Rocky Mountains, and after a course of 380 m., forces its way through a pass, and after flowing first e. and then n., joins the M. R. after a total course of 690 m. The mouth of the M. R. is closed from Oct. to June by ice. See **ATHABASCA (River and Lake): GREAT SLAVE LAKE and RIVER.**

MACKEREL.

MACKEREL, n. *măk'ér-əl* [Dut. *mackreel*; OF. *makerel*; F. *maquereau*; It. *maccarello*, a mackerel: comp. L. *macūla*; It. *maccola*, a spot, a stain—as if named from the dark blotches with which the fish is marked]: a well-known sea-fish. **MACKEREL-GALE**, a gale which only ripples the sea, or one suitable for catching mackerel. **MACKEREL-SKY**, a sky streaked or marked like mackerel.

MACK'EREL (*Scomber*): genus of fishes of family *Scomberidæ* (q.v.); having a spindle-shaped body; the tail becoming very slender, and slightly ridged or keeled on each side. Some of the species have, and some have not, air-bladders. One species, the **COMMON M.** (*S. scomber*), is plentiful on the coasts of Britain and of Europe, from the Mediterranean to the furthest north, also on those of Greenland, and on the American side of the n. Atlantic Ocean. It is a very beautiful fish, of brilliant green and blue, the males having nearly straight dark transverse bands, the females having the bands elegantly undulated. The tail is crescent-shaped. The M. is said sometimes to attain a length of 20 inches, but is usually about 14 or 16 inches long, and about 2 lbs. in weight. It is highly esteemed for the table, and the M. fisheries of s. England and of s. Europe, and of the northern United States and Canada, are very important. M. is readily caught by bait, particularly by any kind of bait moving swiftly through the water—a long slice cut from one of its own kind, or even a slip of red leather, or a piece of scarlet cloth. Boats engaged in M. fishing are therefore often under sail, and a smart or 'mackerel' breeze is preferred. But the greatest quantities of M. are taken by nets; seine-nets wrought by two boats, and inclosing shoals of fish, or dritt-nets—20 ft. deep by 120 ft. long—well corked at the top, and without lead at the bottom. M., after being taken, must be sent very quickly to market, as they soon cease to be quite fresh. Fast-sailing boats are employed for this purpose, which purchase from the fishing-boats, and often use steam. In France and some other parts of Europe, M. are often salted, and this is done on an immense scale in the United States.—It was formerly supposed that great migrations of M. took place; but it is now believed, as in regard to herring, that they merely leave the deep water and approach the coast for the purpose of spawning. The time when they appear varies in different latitudes: in the south of England, the M. season is in the end of spring and beginning of summer. In Orkney, it is in the end of summer.—Another species, the **SPANISH M.** (*S. colias*), which attains the weight of 4 or 5 lbs., and is more obscurely banded, is sometimes caught on the s. coasts of Britain, but is less esteemed: it has an air-bladder, which the common M. has not.—The **SCAD** (q.v.) is sometimes called **HORSE-MACKEREL**.—The **MACKEREL-MIDGE**, a very small fish, is a species of Rockling (q.v.), of the family *Gadidæ*.—See **FISHERY: FISHING**.

MACKKEY—MACKINAW BOAT.

MACKKEY, *măk'ê*, ALBERT GAILLATIN: 1807, Mar. 12—1881, June 20; b. Charleston, S. C. He graduated from the medical department of the College of S. C. 1832; settled in Charleston, and 1838 became demonstrator of anatomy at that college; but, 1844, abandoned medicine, and took up the study of Freemasonry and did miscellaneous writing. 1849, he established *The Southern and Western Masonic Miscellany*, writing most of it himself. 1858-60 he conducted a 'Quarterly' in the interest of Masonry. He studied the ancient and several modern languages and delivered frequent lectures. Finally he applied himself wholly to the study of symbolism, and Talmudic and cabalistic lore. He died at Fortress Monroe. The following publications of M. are considered authorities on their subjects in England and America: *A Lexicon of Freemasonry* (N. Y. 1845); *The Mystic Tie* (Charleston 1849); *Book of the Chapter* (N. Y. 1858); *A History of Freemasonry in S. C.* (1861); *A Manual of the Lodge* (1862); *Cryptic Masonry*, and *Masonic Ritualist* (1867); *Symbolism of Freemasonry*, and *A Text-Book of Masonic Jurisprudence* (1869); *Masonic Parliamentary Law* (1875); and his most important work, *The Encyclopædia of Freemasonry* (1874.)

MCKIM, *ma-kīm'*, JAMES MILLER: 1810, Nov. 14—1874, June 13; b. Carlisle, Penn.; abolitionist. He graduated at Dickinson College; studied at Princeton Theol. Seminary; was ordained pastor of a Presb. church at Womnelsdorf, Penn.; and 1836 retired from pulpit labor to become lecturer for the American Anti-Slavery Soc. He was subsequently publishing agent and corresponding sec. of the Penn. soc. for 25 years; corresponding sec. of the Penn. Freedman's Relief Assoc., and agent for the establishment of freedman's schools in the s. states; agent of the American Freedman's Union Commission 1865-69; and a founder of the *New York Nation* 1865.

MACKINAW, *măk'î-naw*, or MICHILIMACK'INAC: isl. and 3 m. long, n.e. of the Straits of M., between Lake Michigan and Lake Huron, 320 m. w.n.w. of Detroit. It belongs to Michigan. On it is a village of the same name, an old French trading-post, now an attractive summer resort; pop. (1890) 750. Fort Mackinaw, on a bluff 150 ft. high, commands the village and the harbor, which though small is secure and deep. It has extensive fisheries, and is a stopping-place for steamers plying between the lower and upper lakes.

MACK'INAW BLANKET: originally, one of the blankets supplied by the agents of the U. S. govt. at Fort Mackinaw to the aboriginals of the northwestern territories; later, in the northwest, a 'government blanket' issued to the aboriginals at any point of distribution. The Mackinaw blankets were of various styles.

MACK'INAW BOAT: flat-bottomed and flat-sided boat, with sharp prow and square stern, used on the upper great lakes. The larger boats are often rigged

McKINLEY—MACKINTOSH.

with a sail. The advantage of the M. B. over the birch canoe is that it can be drawn up on the beach loaded; its principal disadvantage is its weight—a capital objection when a boat has to be carried over portages.

McKINLEY, WILLIAM: 24th pres. of U. S.; b. Niles, O., 1844, Feb. 26—1901, Sept. 14; received an academical education; served in the Union army through the civil war, entering as a private in the 23d O. vols., and being mustered out as brevet maj.; was admitted to the bar 1867; and settled in Canton, O., to practice. In 1869–71 he was prosecuting atty. for Stark co., O. He was elected representative in congress from the 18th O. dist. as a republican 1876, 78, 80, 82, 84, 86, and 88; was unseated, though holding a certificate of election, 1884; and was defeated by a small majority 1890. In 1888, June, he was a delegate to the republican national convention, was made chairman of the committee on platform, and is understood to have been the author of the resolutions adopted by the convention. In congress he distinguished himself by his advocacy of a protective tariff, and for several years was a member of the committee on ways and means. As chairman of this committee, he had charge of the tariff bill bearing his name, which was adopted in the house 1890, Sep. 27, by a vote of 152 to 81, and in the senate Sep. 30, by a vote of 33 to 27. This bill became a law a few weeks prior to the congressional elections 1890; and its opponents claimed that it was the cause of the widespread defeat of republican candidates and the change of the house of representatives to a democratic body. He was elected gov. of O. in 1891, and re-elected 1893. The national convention of the republican party, in St. Louis, 1896, June 16–18, nominated McK. for pres. of U. S., on a platform embodying the republican policy of protection, also declaring against free-silver coinage and in favor of maintaining the gold standard. He was elected over William J. Bryan and four other candidates by a popular vote of 7,104,779. and an electoral vote of 271; and in 1900 was re-elected over Mr. Bryan and six other candidates; popular vote 7,207,923, electoral 292. The distinguishing feature of his first administration was the successful prosecution of war against Spain and the varied results thereof. On 1901, Sept. 5, while holding a public reception at the Pan-American Exposition in Buffalo, N. Y., he was twice shot by an avowed anarchist, and died on the 14th.

MACKINTOSH, or MACINTOSH, n. *măk'in-tōsh* [called after the inventor]: a waterproof overcoat or cape.

MACKINTOSH, *măk'in-tōsh*, SIR JAMES: philosopher and politician: 1765, Oct. 24—1832, May 22; b. Aldourie, Inverness-shire; of old Highland stock; son of Capt. John Mackintosh of the army. He studied at King's College, Aberdeen, where his most intimate companion was Robert Hall, afterward the celebrated Bap. preacher. He went to Edinburgh 1784 to study medicine; and after obtaining his diploma—settled in London, and for

some time supported himself by writing for the newspapers. The first work that brought him into notice was his *Vindiciæ Gallicæ* (1791), in reply to Burke's *Reflections on the French Revolution*. In sober philosophic thought, sound feeling, and common sense, it greatly surpassed the splendid philippic against which it was directed, and was enthusiastically lauded by the liberal party; Burke himself thought highly of it. Fox, Sheridan, and other leading whigs sought the author's acquaintance; and when the 'Association of the Friends of the People' was formed, he was appointed secretary. About this time, he turned his attention to the legal profession, and was called to the bar 1795, and attained eminence as a forensic lawyer. In 1799 he delivered a course of lectures on the Law of Nature and of Nations, before the benchers of Lincoln's Inn, attended by brilliant audiences. His defense of Peltier, 1803, Feb. 21, charged with libel on Bonaparte, was superb; it was translated into French by Madame de Stäel, and scattered broadcast over Europe. In 1804, he was appointed recorder of Bombay, for which place he sailed in the beginning of the year, arrived there in May, was appointed judge of the admiralty court 1806, and remained till 1811. His Indian career was highly creditable. After his return to England, he entered parliament as whig member for Nairn (1813), accepted the professorship of law in the college of Haileybury 1818, and 1830 became a member of the board of control under the Grey ministry, and spoke in favor of the Reform Bill. This was his last great political effort. It is occasion of regret that Sir James M. ever turned aside to a political life. He was essentially a literary moralist and philosopher, and might have won far higher and more enduring reputation if he had resolutely followed that line. As a speaker in parliament, he was broad in his sympathies, and so candid as well as so elaborate, that far inferior men surpassed him in instant popular effect. He was one of the most cultured and balanced men of his time.

His *Dissertation on the Progress of Ethical Philosophy*, written for the *Encyclopædia Britannica*, though incomplete, and lacking that precision and profundity that can be acquired only by rigorous and extensive research, shows the admirable powers of the author, his breadth of view, tolerance, impartiality, love of truth and virtue, and his gift of calm and measured eloquence. For Lardner's *Cyclopædia*, he wrote a brief but excellent survey of the history of England. A historical fragment (intended to form portion of a large work) entitled *History of the Revolution in England in 1688*, appeared after his death, and was pronounced by Macaulay the best history of the reign of James II. A collection of his miscellaneous works, including his contributions to the *Edinburgh Review*, was published at London, in 3 vols. See *Memoirs of his life by his son*, 2 vols. (Lond. 1835).

MACKNIGHT, *mak-nīt'*, JAMES, D.D: clergyman of the Church of Scotland: 1721, Sep. 17—1800, Jan 13; b. Irvine, Ayrshire. He studied at Glasgow Univ., and at Leyden, Holland; and 1753 was ordained minister of the parish of Maybole. In 1769, he was translated to Jedburgh, and thence to Edinburgh 1772, where he died. His principal works are—*Harmony of the Four Gospels* (1756); *The Truth of the Gospel History* (1763); and *A New Translation of the Apostolical Epistles, with Commentary and Notes* (1795).

McLANE, *mak-lān'*, ALLAN: patriot: 1746, Aug. 8—1829, May 22. He came to Kent co., Del., 1774, and served in the American army throughout the revolutionary war. In 1775 he fought with the Va. militia in the Great Bridge conflict near Norfolk; afterward as lieutenant with Rodney's Del. regiment in the battles of Long Island and White Plains and Princeton. He became captain 1777; commanded the outposts around Philadelphia; took part in the battle of Monmouth 1778, June 28; was with Wayne at Stony Point; and in the siege of Yorktown until the surrender of Cornwallis. He retired after the close of the war with the rank of col., and was made judge of the court of common pleas of Del. In 1790 Washington made him U. S. marshal of Del., which office he held until 1798. In 1808 Jefferson appointed him collector of the port of Wilmington, which he held till his death.

McLANE, *mak-lān'*, ROBERT MILLIGAN: diplomatist: b. Wilmington, Del., 1815, June 23. He was educated in Wilmington, Baltimore, and Paris; graduated at the U. S. Milit. Acad. 1837; served in the Seminole Indian war in Fla., in the Cherokee campaign in Ga., and on surveying duty in the N. W. Territory; was admitted to the bar and ordered to examine the dike and drainage systems of Holland and Italy 1841; and resigned from the army and began practicing law 1843. He was a member of the Md. legislature 1845-47; congress 1847-51; U. S. minister to China 1853-55; to Mexico 1859-60; counsel for the Western Pacific railroad several years; delegate to the national democratic convention 1876; elected state senator 1877, member of congress 1878 and 80, and gov. 1883; and U. S. minister to France 1885-89.

MACLAURIN, *mak-law'rīn*, COLIN: mathematician: 1698-1746, June 14; b. Kilmodan, Argyleshire, Scotland. He was educated at Glasgow Univ., where he took the degree M.A. 1713; and after four years of close study obtained, after severe competitive trial, the professorship of mathematics in Marischal College, Aberdeen. In 1719, he visited London, and was received as member of the Royal Society. Here he published his *Geometria Organica* (1720), an elaborate treatise on the 'description' of curves. He afterward visited France in the capacity of tutor, and while there, wrote a dissertation on the impact of bodies, which gained the prize of the Acad. of Sciences 1724. The following year, he was appointed assistant to

James Gregory, prof. of mathematics in the Univ. of Edinburgh, and soon succeeded him in the chair. His writings, distinguished for originality, profundity, clearness, and elegance of style, gave strong impetus to mathematical study in Scotland. His works, besides those above mentioned, are—*A Treatise of Fluxions* (Edinburgh 1742), in defense of Newton's discoveries against the attack of Berkeley, and the first in which the principles of fluxions were logically arranged; *A Treatise on Algebra* (1748), left incomplete; *An Account of Sir Isaac Newton's Philosophical Discoveries* (Lond. 1748), also incomplete and posthumous; and a number of papers in the Edinburgh *Philosophical Transactions*. His most important scientific investigations related to the 'form of the earth,' the 'tides,' and the action of the wind on the sails of ships and wind-mills. His memoir on the tides was, 1740, presented in competition for the prize offered by the Acad. of Sciences; but three other competitors, Euler, Daniel Bernouilli, and Father Cavalleri, having appeared, the Academy divided the prize among them all. M. was prominent 1745, in preparing defenses for Edinburgh against the army of the Pretender.

MACLEAN', LETITIA ELIZABETH (LONDON): see LONDON, LETITIA ELIZABETH.

MCLEAN, *mak-lān'*, SARAH PRATT: author: b. Simsbury, Conn., 1858, July 3. She was educated at S. Hadley Seminary; taught school in Mass.; married Franklin Lynde Greene 1887; and beside magazine sketches has published *Cape Cod Folks* (Boston 1882); *Some Other Folks* (1883); and *Towhead: the Story of a Girl* (1884). Her *Cape Cod Folks*, a graphic work, full of local color, created a sensation in the locality treated in it, and led to a suit for libel by some citizens, who deemed themselves held up to ridicule in it. Under this pressure objectionable passages were stricken out in subsequent editions.

MACLED, a. *māk'ld* [L. *macūla*, a spot, a stain]: in *min.*, a name applied to surfaces covered with spots of a hue deeper than, or different from, the main ground of the substance. MACLES, n. plu. *māk'lz*, 'twin crystals' which are united by simple contact of their faces by interpenetration, or by incorporation, these twin forms being often repeated so as to form groups. MACLE, n. *māk'l*, another name for *chiastolite*, from being partly light and partly dark colored. It is a silicate of alumina, containing a little magnesia and oxide of iron, and is often used for making beads for rosaries.

MACLEOD, *mak-lowd'*, NORMAN, D.D.: clergyman of the Church of Scotland, eminent for his pulpit oratory and his liberal Christianity: 1812, June 3—1872, June 16; b. Campbeltown, in Argyleshire. He was educated at the Univ. of Glasgow, and became minister successively of Loudon in Ayrshire, Dalkeith, near Edinburgh, and the important Barony Church, Glasgow. He gained the degree D.D. 1858, was appointed one of the queen's chap-

lains in Scotland, and 1869 was moderator of the general assembly of the church. His friendship with the queen and the royal family was unusually close. In 1850, he visited Canada, and in 1867, India, in connection with the missions of the Church of Scotland. Dr. M. was of the most liberal school in the Scotch Kirk. 1850-60 he edited the *Edinburgh Christian Magazine*, and from 1860 was the conductor of *Good Words*, to which he contributed numerous tales, essays, verses, etc., many being republished. Among the most popular of his works are *Reminiscences of a Highland Parish*, *The Old Lieutenant and his Son*, *Eastward*, *The Gold Thread*, *The Starling*, *The Earnest Student*, *The Home Education*, *Sermons*, etc. Dr. M. died at Glasgow. See *Memoir*, by his brother, the Rev. Donald Macleod (1876).

MACLISE, *mak-lēs'*, DANIEL, R.A: painter of Scotch extraction: 1806, Feb. 2 (or 1811, Jan. 25)—1870, Apr. 25; b. Cork, Ireland. He entered the Royal Acad., London, 1828. In 1833, he exhibited his first picture at the British Institution, *Mokanna Unveiling his Features to Zelica*; and in the same year, *All-Hallow Eve*, and *A Love Adventure of Francis I. with Diana of Poitiers*, at the Royal Academy. Since then, among his principal works may be mentioned—*Robin Hood and Richard Cœur-de-Lion*, and *Merry Christmas in the Baron's Hall* (1838); *The Banquet Scene in Macbeth*, and *Scene from Twelfth Night* (1840); *Play Scene in Hamlet* (1842); *Ordeal by Touch* (1846); and his design of *Shakespeare's Seven Ages* (1848); *The Gross of Green Spectacles* (1850); *Caxton's Printing-office* (1851). The frescoes—each 45 ft. long and 12 ft. high—in the Royal Gallery of the house of lords, depicting *The Meeting of Wellington and Blücher on the Evening of the Battle of Waterloo*, and *The Death of Nelson at Trafalgar*, are admitted to be the finest mural paintings executed in Britain. The only pictures worthy of note exhibited by M., after the completion of these great works, were *Othello*, *Desdemona*, and *Ophelia* (1867); *The Sleep of Duncan*, and *Madeline after Prayer* (1868); *King Cophetua and the Beggar Maid* (1869); *The Earls of Desmond and Ormond*, posthumously exhibited 1870.

MACLURE', Sir ROBERT JOHN LE MESURIER: see M'CLURE.

MACLURE, *ma-klūr'*, WILLIAM: 1763-1840, Mar. 23; b. Ayr, Scotland. He made a fortune in London, and removed to the United States, 1796; served, 1803, as one of the commissioners to settle the French spoliation claims of American citizens; and there became interested in geology. Returning, he undertook the private geological survey of the whole country, visiting nearly every region, and crossing the Alleghanies 50 times. In 1809 he gave the results before the American Philosophical Soc. in *Observations on the Geology of the United States, explanatory of a Geological Map*. In 1817 he published his map, attracting much attention and gaining the title of 'Father of American Geology.' The same year he became pres. of the

Acad. of Nat. Sciences, which office he held till his death. 1816-17 he visited the W. I. islands, and afterward published an account of their geology observed in 20 visits there; 1819 he went to France and Spain, returning 1824, when he tried to establish an agricultural school for the lower classes; failing, he went to Mexico 1827, and resided there till his death at San Angel. He became pres. of the American Geological Soc. 1828. The Acad. of Nat. Sciences received from him his 5,000 books, valuable specimens, and \$25,000, with which it was enabled to finish its building in Philadelphia.

MACLUREA, n. *māk-lô'rě-ă* [after Dr. Maclure]: in *geol.*, a genus of flatly-spiral and operculated shells, often of large dimensions, especially characteristic of Lower Silurian strata.

MACMAHON, *māk-mâ-ōng'*, MARIE EDME PATRICE MAURICE DE, Marshal of France: b. at Sully, 1808, July 13; of Irish descent. Entering the army, he had a distinguished career in Algeria, and commanded the division that stormed the Malakoff at Sebastopol 1855. He was conspicuous in the Italian campaign of 1859, received a marshal's baton, and was created Duke of Magenta in commemoration of the battle of that name. He was nominated gov.gen. of Algeria 1864. In the Franco-German war 1870-1, he had command of the first army corps, was defeated at Wörth, and captured, wounded, at Sedan. In 1871 after the war, he was made commander-in-chief of the French army, and 1873 was elected president of the republic, his powers being confirmed to him for a period of seven years. His sympathies were conservative, and at times seemed reactionary; some of his official appointments were deemed to savor of an intention to mold events favorably to the return of the empire and the succession of the young Napoleon to the throne; and suspicions of a *coup d'état* were more than once excited, especially 1877. His refusal to sanction the dismissal of several generals known to be hostile to the republican *régime*, occasioned the taking of such a firm position by his cabinet as led to his resignation 1879, Jan. He d. 1893, Oct. 17.

McMASTER, *mak-mäs'tér*, JOHN BACH: historian: b. Brooklyn, N. Y., 1852, June 29. He graduated at the College of the City of New York 1872; spent a year teaching grammar there; studied civil engineering, began his historical writing 1873; became instructor in civil engineering in the College of N. J. 1877; and was appointed prof. of American history in the Univ. of Penn. 1883. He has published *History of the People of the United States from the Revolution to the Civil War* (New York, vol. i. 1883: ii. 1885); and *Benjamin Franklin* in the *Men of Letters* series (Boston 1887).

McMILLAN, *mak-mīl'an*, HUGH, D.D., LL.D., F.R.S.E.: b. 1833, Sep. 17, at Aberfeldy, Perthshire, Scotland. He was educated at Bredalbane and at Edinburgh Univ.; 1859, became minister of the Free Church in Kirkmi-

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chacl, Perthshire; 1864, of Free St. Peter's, Glasgow; 1878, of Free West Church, Greenock, where he is still in service. He has written much for the periodical press, and is author of the following books: *Bible Teachings in Nature* (1863); *Holidays in High Lands*, *Search of Alpine Plants* (1869); *The True Vine* (1871); *First Forms of Vegetation* (1861); *The Ministry of Nature* (1872); *The Garden and the City* (1872); *Sunlights in the Wilderness* (1872); *Our Lord's Three Raisings from the Dead* (1875); *Sabbath of the Fields* (1875); *Two Worlds are Ours* (1880); *The Marriage in Cana of Galilee* (1882); *The Riviera* (1885).

McNIEL, *mak-nēl'*, JOHN: 1784–1850, Feb. 23; b. Hillsborough, N. H.: soldier. He entered the U. S. army as capt. 11th inf., 1812, Mar. 12; was promoted maj. 1813, Aug. 15; led a bayonet charge that secured a victory for the Americans in the battle of Chippewa 1814, July 5; was brevetted lieut.col. for this act, and col. for services at Niagara July 25; retained in the army after the war; appointed lieut.col. 1st inf. 1818, Feb. 24; brevetted brig.gen. 1824, July 25; promoted col. 1st inf. 1826, Aug. 28; and resigning his commission was surveyor of the port of Boston from 1830 till his death.

MACOMB, *ma-kôm'* or *ma-kōm'*, ALEXANDER: 1782, Apr. 3—1841, June 25; b. Detroit, Mich. In 1799, he entered the army as cornet of cavalry; 1805, was made capt.; 1808, major; and when the war of 1812 began he was lieut.col. of engineers, and adjutant-gen. In 1813, he became col. of artillery and served at Niagara and Ft. George; 1814, was made brig.gen., in command of the n. frontier on Lake Champlain. At Plattsburg he commanded the regulars and some militia who sustained the attack of the much larger force of British under Provost; for which he was made maj.gen. and awarded a medal; 1835 he became commander-in-chief of the army, and was in active service for a time during the Fla. war. He died at Washington. He published *A Treatise on Martial Law and Court-Martials as practiced in the United States* (Charleston 1809); *A Treatise on the Practice of Court-Martials* (N. York 1840); and supervised Cooper's *Tactics and Regulations for the Militia* (Phila. 1836).

MACOMB', WILLIAM HENRY: naval officer: 1818, June 16—1872, Aug. 12; b. Detroit, Mich.; son of Gen. Alexander M. He entered the U. S. navy as midshipman 1834; became lieut. 1847, commander 1862, capt. 1866, and commodore 1870; was engaged in the capture of the Barrier forts at Canton, China, 1856, Nov. 16–22; commanded the *Metacomet* in the Paraguay expedition 1859; served actively through the civil war, commanding the naval force in the capture of Plymouth, N. C., 1864, Oct. 30, and distinguishing himself on the Roanoke river; and after the war was attached to the European squadron and was a light-house inspector,

MACON.

MACON, *mā'kon*: city in central Ga., Bibb co., in a pleasant wooded country on the Ocmulgee river, abt. 80 m. s.e. of Atlanta; on the Georgia Central and the South-western railroads, with direct line also to Brunswick on the coast. The river is a navigable branch of the Altamaha. M. is the seat of the State Acad. for the blind (1852), Mercer Univ. (Bapt. 1838), Wesleyan College for girls (1839), and Pio Nono College (Rom. Cath.). Here are great railroad machine-shops, foundries, cotton and other factories, and flour mills; also three newspapers and six banks. It was founded 1823, and has long been noted for its numerous and beautiful shade trees, and for its tasteful and well-ordered streets, and since 1870 for its fine park near the centre. Many of the streets, bordered with grass and trees, are 180 ft. wide. In the vicinity of the city are ancient artificial mounds. The annual fair in its park is a great resort for the planters of central Georgia. Pop. (1850) 5,720; (1860) 8,247; (1870) 10,810; (1880) 12,748; (1890) 22,746; (1900) 23,272.

MÂCON, *mâ-kōng'* (ancient *Matisco*): town of France, cap. of the dept. of Saône-et-Loire, on the right bank of the Saône, 38 m. n. of Lyons. M. has extensive trade in wines known as Macon, as well as in corn, cattle, etc., and there are various manufactures. There are some Roman antiquities. Pop. (1891) 19,573; (1896) 18,739.

MA'CON, NATHANIEL: 1757, Dec. 17—1837, June 29; b. Warren co., N. C. He left his studies at Princeton, 1777, to join the American army at the opening of the revolutionary war; soon returned to N. C. and studied law; re-enlisted as private under his brother, Col. John M., and served at Ft. Moultrie, battle of Charleston, of Camden, and under Gen. Greene till 1782. Elected to the N. C. senate he refused pay and pension for his military services, and was a faithful and useful legislator till 1785; though opposing the adoption of the federal constitution. 1791–1815 he served as a democrat in congress; then till 1828 as U. S. senator. 1801–06, he was speaker of the house; and twice declined the post-master-generalship offered him by Jefferson. He voted for the embargo, and advocated only a defensive war against Great Britain, opposing the enlargement of the navy, privateering, fortification, and all projects of internal improvement. Though offered high executive appointments he always refused every office not the direct gift of the people, and he never recommended any of his family for office. In 1824, he received the electoral votes of Va. for the vice-presidency; and 1825–27 was pres. *pro tem.* of the senate. His speeches were brief, pointed, and practical. He was always an extreme 'Jeffersonian Democrat.' In 1835, he served in the constitutional convention of N. C.; and 1837, as presidential elector on the Van Buren ticket. He believed in the right of secession but not of nullification; opposed giving the ballot to free negroes, land qualification for voters, state control of works of internal improvement, and all religious tests as conditions of holding office. He was

the intimate friend of Jefferson, Madison and Randolph of Roanoke; was a devout student of the Bible, and a sternly pure and upright man.

MACONNAIS, *mâ-kon-nā'*: ancient territory in Burgundy, France, now forming the dept. of Saône-et-Loire (q.v.); cap. Mâcon (anc. *Matisco*). It was occupied successively by the Ædui, the Romans under Julius Cæsar, Germans, Burgundians, Huns, Hungarians, the Carolingian kings, and Vandals; sold to the king of France 1228; acquired by several dukes of Burgundy: restored to the crown 1416; given by Charles VII. to Philip the Good 1435; and finally restored to the French crown 1477. Its cap. was a Huguenot stronghold in the 16th c., and did not yield to Henry IV. till 1594.

MACOYA (or MACAHUBA) PALM: see MACAW TREE, GREAT.

MACPHERSON, *mak-fér'son*, EDWARD, LL.D.: author: b. Gettysburg, Penn., 1830, July 31. He graduated at the Univ. of Penn. 1843; studied law, and engaged in journalism a short time; member of congress 1859-63; clerk of the U. S. house of representatives 1863-73; chief of the U. S. bureau of engraving and printing 1877-78; and clerk of the house of representatives 1890. His rank as a statistician was very high. He received his degree from the Univ. of Penn. 1877. His publications include *Political History of the United States during the Great Rebellion* (Washington 1865); *The Political History of the United States during Reconstruction* (1870); and *Hand-Book of Politics* (biennially since 1872). He has been editor of the *New York Tribune Almanac* and (American) the *Almanach de Gotha* for several years. He d. 1895, Dec. 14.

MACPHERSON, *mak-fér'son*, JAMES: Scotch writer who gained notoriety in literature: 1738-1796, Feb. 17; b. Ruthven, Inverness-shire. After finishing his studies at King's College, Aberdeen, he became a schoolmaster in his native village, published a poem, *The Highlander*, 1758, contributed verses to the *Scots Magazine*, and in the following year, meeting the Rev. Dr. Alexander Carlyle, minister of Inveresk, and John Home, author of *Douglas*, he showed them some fragments of Gaelic verse, of which he also gave them 'translations.' These 'translations' (16 in number) appeared 1760, and were so much relished, that the Faculty of Advocates in Edinburgh raised a subscription to enable M. to make a tour through the Highlands for the purpose of collecting more of the poetry. M. was very zealous and successful in the 'discovery' of literary treasures. Where he made his discoveries no man knows. He found ancient mss. in regions where no one before had suspected their existence, and where no one since has been fortunate enough to obtain any. The result was the appearance at London, 1762, of the so-called 'Poems of Ossian,' under the title *Fingal, an Epic Poem, in Six Books*; and 1763, *Temora, an Epic Poem, in Eight Books*.

A storm of controversy soon arose in regard to their genuineness. Its decision ultimately was unfavorable to Macpherson, not as having absolutely invented the whole, but as having set old Gaelic fragments which he had picked up perhaps in the talk of the aged Highland folk—possibly also scraps of Gaelic writing—in long imitative composition of his own; and as having then—which was his great offense—insisted that they were ‘translations’: see *OSSIAN, POEMS OF*. These poems were, however, the making of him in a worldly point of view. He was appointed surveyor-gen. of the Floridas (1764) with a salary for life, and agent to the Nabob of Arcot—a very lucrative office—1779; entered parliament in the following year as member for Camelford, sat for 10 years, and then retired to an estate which he had purchased in Inverness-shire, where he died. His body was brought back to England, and was actually interred (at his own request and expense) in Westminster Abbey. M. wrote some historical compilations and pamphlets; and translated the *Iliad* into prose—work praised by some Scotch critics, but severely criticised in England.

MCPHERSON, JAMES BIRDSEYE: 1828, Nov. 14—1864, July 22; b. Sandusky, O. In 1853 he graduated first in his class of 52 at West Point, and was appointed brevet 2d lieut.; 1854 was commissioned 2d lieut.; 1858, 1st lieut.; 1861, capt. of engineers, serving on construction duty till the civil war, when he applied for active duty on the field. He was rapidly promoted, until he became maj.gen. of vols. 1862, Oct. 8, serving on Halleck’s staff till the spring of 1862, when he went on Grant’s staff, under whom he served as chief engineer at Ft. Henry, Ft. Donelson, Shiloh, Corinth, and Iuka, and June to Oct., having charge of the railroads in w. Tenn. Oct. 2 he took command of a brigade under Rosecrans at Corinth and led the pursuit of Van Dorn’s Confederate army; Oct 14, he was made commander of the division stationed at Bolivar, Tenn.; Nov. and Dec. he commanded the right wing of Grant’s army, till the reorganization of the army, 1863, Jan., when he was made commander of the 17th army corps. His corps had a prominent part in the campaign against Vicksburg. At Port Gibson, 1863, May 1, part of it, led by him in person, decided the battle against the Confederates. May 12, with the right wing of the army he totally routed Johnston at Raymond; and two days later his and Sherman’s corps again defeated him at Jackson. Two days after that, his corps did the heavy fighting at Champion’s Hill, when Pemberton was driven into Vicksburg. In the final assaults, May 19 and 22, his corps formed the centre of the army, but though fighting bravely, was not successful. At the surrender, McP. was one of the commissioners to fix the terms. His skill and gallantry were specially commented on by Grant, on whose recommendation he was made brig.gen. of the regular army, the appointment to date from 1863, Aug. 1. He was given command of the Vicksburg district after the sur-

render, and remained there till spring 1864, except during Feb. when he went with Sherman's expedition to Meridian, Miss. He succeeded Sherman as commander of the army of the Tenn.; when in the spring of 1864 the latter took Grant's place as head of the western armies.

At the beginning of Sherman's Ga. campaign, though McP. did not meet the former's expectations in not at once attacking Resaca and so forcing Johnston to retreat from Dalton eastward, it is still not certain that McP.'s prudence was not wisest. When Sherman with his whole army did attack and defeat Johnston at Resaca, 1864, May 14 and 15, McP.'s corps did its part gallantly. During the rest of May, June, and July there was continual fighting, with bloody battles at New Hope Church, May 26; Dallas, May 28, where McP.'s corps repelled the Confederate attack made specially upon it; Kenesaw Mt., June 27; and around Atlanta, July 19-22, where his corps formed Sherman's left flank. In repelling a furious attack of the combined Confederate forces under Hood, July 22, McP. rode into the very lines of the enemy, and was killed. Aged only 35, commander of an army of 30,000 men, distinguished already for ability, bravery, quick perception, correct judgment, and ardent patriotism and zeal, he seemed to have a future before him even more brilliant than was his past. As it was, he had the highest respect, admiration, and esteem of his superior officers, and the love of all his soldiers, as is evidenced by the noble bronze statue erected to his memory at Washington, D. C., by his comrades of the Army of the Tennessee.

McPHERSON, SIMON JOHN, D.D.: Presbyterian clergyman: b. Wheatland, N. Y., 1850. He graduated with highest honor at Princeton College 1874, and studied theology in Princeton Theol. Seminary. He was pastor of Munn Ave. Presb. Church, East Orange, N. J., 1879-82; and since 1882 has been pastor of Second Presb. Church, Chicago. He has breadth and accuracy of thought, and in the pulpit is clear, vigorous, and impressive.

MACQUARIE, *mak-kwōr'i*: river of New South Wales, rising about 80 m. w. of Sydney, and after a course of 750 m. emptying into the Darling (q.v.).

MACQUER, *mā-kār'*, PIERRE JOSEPH: famous chemist and physician: 1718-1784, Feb. 15; b. Paris. He wrote *Éléments de Chimie théorique* (1741); *Éléments de Chimie pratique* (1751); *Dictionnaire de Chimie* (1776). See GASES.

MACRAME, *māk'rā-mā* [unascertained]: a knotted lace made chiefly at Genoa, done with twine.

MACRAUCHENIA, n. *māk'raw-kē'nī-ā* [Gr. *makros*, long; *achen*, the neck]: in *geol.*, an extinct Tertiary herbivorous mammal of S. Amer. resembling the llama, but much larger; connecting link between the Palæotherium (q.v.) and the camel family.

MACREADY, *mak-rē'dī*, WILLIAM CHARLES: English tragedian, whose father was the manager of a provincial company: 1793, Mar. 3-1873, Apr. 17; b. London. He

MACRO—MACROCOSM.

was educated at Rugby; and made his first appearance as Romeo, Birmingham, 1810. For four years he was connected with his father's company, and for two years thereafter sustained leading parts in the provinces. In 1816, Sep., he made his first appearance before a London audience, and gained the applause of Kean, who was one of his auditors. His progress in the higher walks of the drama was slow. In 1819, he made a hit in the character of Richard III., and he afterward adventured on other of Shakespeare's characters with success. In 1826, he made a tour in the United States, and visited Paris 1828. He was lessee of Covent Garden Theatre 1837; and afterward undertook the management of Drury Lane, but lost heavily by it. He visited America a second time 1843; and again 1848, when he barely escaped with his life from a riot in the Astor Place Opera House, New York, occasioned by the jealousy of the admirers of the rival American actor Forrest—in which 22 persons were killed by the soldiers called out to suppress the tumult. On his return home he was engaged at the Haymarket, and his theatrical career was closed 1851, Feb. Shortly afterward a public dinner was given to the great actor. *Macready's Reminiscences* appeared 1875. M. was a fine and impressive actor, but indebted for success more to art than to nature. He succeeded best in the graver characters of the drama. He inherited more of the stateliness of Kemble than of the fire of Kean.

MACRO-, prefix, *măk-rō-* [Gr. *makros*]: long.

MACROBIUS, *ma-krō'бі-ūs*, AMBROSIUS AURELIUS THEODOSIUS: Latin grammarian of the 5th century. He appears to have been by birth a Greek, but literally nothing whatever is known of his life. Two of his works remain, entitled *Commentarius ex Cicerone in Somnium Scipionis*, and *Saturnaliorum Conviviorum Libri Septem*. The former is the best known, and was much read during the middle ages; the latter is in the form of dialogue, and contains many valuable historical, mythological, antiquarian, and critical observations. Of a third work, *De Differentiis et Societatibus Græci Latinique Verbi*, we possess only extracts made in the 9th c. It has been warmly discussed whether M. was a Christian or a pagan: there is no evidence that he was a Christian. The *editio princeps* of M. appeared at Venice 1472; of later editions the best are those of Jan (1852) and Eyssenhardt (1868).

MACROCEPHALOUS, a. *măk'rō-sěf'ă-lūs* [Gr. *makros*, long; *kephālē*, the head]: having a large head; in *bot.*, having the cotyledons of a dicotyledonous embryo confluent, and forming a large mass compared with the rest of the body.

MACROCOSM, n. *măk'rō-kōzm* [Gr. *makros*, long; great; *kosmos*, the world]: the great world; the visible system of worlds; opposed to *microcosm*.

MACRODACTYLS—MACROSPORES.

MACRODACTYLS, n. plu. *măk'rō-dăk'tîlz*, or **MAC'RO-DAC'TYLI**, -tîl-î [Gr. *makros*, long; *dak'tulos*, a finger]: a family of birds having very long toes, including the coots and water-hens. **MAC'RODACTYL'IC**, a -tîl'îk, having long toes.

MACRODIAGONAL, n. *măk'rō-dî-ăg'ô-năl* [Gr. *makros*, long; *dia*, through; *gonîă*, an angle]: the longer diagonal of a rhombic prism.

MACROGLOSSIA, n. *măk'rō-glôs'sî-ă* [Gr. *makros*, long; *glossa*, the tongue]: an extraordinary hypertrophic enlargement of the tongue, in consequence of which it protrudes from the mouth.

MACROGNATHIC, a. *măk-rôg-năth'îk* [prefix *macro-*; Gr. *gnathos*, a jaw]: long-jawed; term applied by Prof. Huxley to skulls of neolithic age, found in caves and tombs in Belgium, France, and Spain.

MACROMETER, n. *mă-krôm'ê-têr* [Gr. *makros*, long; *metron*, a measure]: an optical instrument for measuring inaccessible objects.

MACROOM, *mă-krôm'*: post and market town of county Cork, Ireland, on the river Sullane, 21 m. w. from Cork, with which it is connected by railway. The town consists merely of a single street, nearly a mile long, and contains some good houses and shops, but most of the dwellings are mean and poverty-stricken. Pop. (1881) 3,099.

MACROPHYLLINE, n. *măk'rō-fîl'lîn* [Gr. *makros*, long; *phullon*, a leaf]: in *bot.*, consisting of elongated and extended leaflets.

MACROPODOUS, a. *mă-krôp'ô-dûs* [Gr. *makros*, long; *pous* or *poda*, a foot]: applied to a family of crustaceans, the macropods, having enormously long feet; in *bot.*, having the radicle large in proportion to the rest of the body. **MACROPUS**, n. *măk'rō-pûs*, the kangaroo, in allusion to the great length of its hind feet. **MACROPODIDÆ**, family of marsupials (see **MARSUPIALIA: KANGAROO**).

MACROPOMA, n. *mă-krôp'ô-mă* [Gr. *makros*, long or large; *poma*, a cover or lid]: in *geol.*, a genus of sauroïd fishes peculiar to the Chalk and Wealden—so named from their large opercula, the head being equal to one-fourth of the entire length of the body.

MACROPTEROUS, a. *mă-krôp'têr-ûs* [Gr. *makros*, great; *pteron*, a wing, the blade of an oar]: long-finned; long-winged.

MACRORHINUS, n. *măk-ro-rî'nûs* [Gr. *makrorrhinos*, long-nosed]: genus of *Phocidæ* (seals). *M. elephantinus* is the elephant seal, named from its short proboscis when full-grown.

MACROSPORES, n. plu. *măk'rō-spôrz* [Gr. *makros*, long; *spora*, seed]: the large spores found in connection with smaller ones called *microspores* in certain lycopods, and some other cryptogams. **MACROSPORANGIA**, n.

măk'rō-spō-răn'jī-ă [Gr. *anggos*, a vessel]: the cells or thecae which contain macrospores.

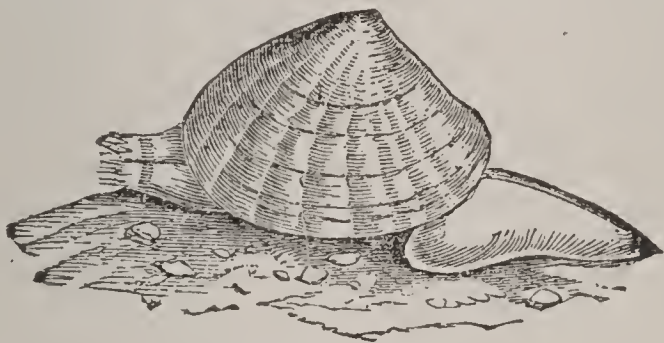
MACROTHERIUM, n. *măk'rō-thē-rī-ŭm* [Gr. *makros*, large; *thērion*, a wild beast]: in *geol.*, a genus of edentate mammals from the Miocene Tertiaries of Europe, having affinities to the African ant-eater, but six or eight times larger.

MACROTOUS, a. *mă-krō'tūs* [Gr. *makros*, long; *ous* or *ota*, an ear]: in *zool.*, long-eared.

MACROURA, or MACRURA, n. plu. *mă-krō'ră*, or MACROURANS, n. plu. *-rănz* [Gr. *makros*, long; *oura*, the tail]: a family of decapod crustaceans having long tails, as the lobster, prawn, shrimp, etc. MACROUROUS, a. *-krō'rūs*, long-tailed.

MACTATOR, n. *măk-tă'tēr* [L.—from *mactatus* pp. of *macto*, I sacrifice, I kill]: a murderer, a killer.

MACTRA, n. *măk'tră* [Gr. *maktra*, a kneading-trough, named in fanciful allusion to the shape]: genus of lamelibranchiate mollusks, having a somewhat triangular shell, broader than long, the valves equal; the animal with the siphons united to the extremity, and a large



Mactra Stultorum.

compressed foot. They are sometimes called Trough Shells. The species are numerous, and widely distributed; they burrow in the sand and mud of sea-shores, and of the bottom of the sea. The foot enables them also to move with activity, after the manner of cockles. Some of the species have beautiful shells. Several small species are very abundant on some shores, so that they are gathered for feeding pigs, but not by those who have much regard for the quality of the bacon. The genus *M.* is type of a family, *Mactridæ*.

McTYEIRE, *mak-tī-ăr'*, HOLLAND NIMMONS, D.D.: 1824, July 28—1889, Feb. 15; b. Barnwell dist., S. C.: Meth. Episc. bp. and educator. He graduated at Randolph-Macon College 1844; entered the Meth. Episc. ministry 1845; was first editor *New Orleans Christian Advocate* 1851: editor *Nashville Christian Advocate* 1858: elected bp. 1866; and became pres. of the board of trustees of Vanderbilt Univ. at Nashville, 1873. He received his degree from Emory College, Ga., 1858. He wrote several denominational text-books and histories.

MACULA, n. *măk'û-lă*, MACULÆ, n. plu. *-lê* [L. *macula*, a spot: F. *macula*]: a spot, as on the skin, or on the

face of the sun or moon. MAC'ULATE, v. -lāt [*L. maculātus*, spotted]: to stain; to spot; to sully or defile: ADJ: in *bot.*, spotted; blotched. MAC'ULATING, imp. MAC'ULATED, pp. MAC'ULA'TION, -lā'shŭn, the act of spotting; a stain or spot. MAC'ULA LU'TEA, in *anat.*, a yellow spot, about $\frac{1}{20}$ of an inch in diameter, on the axis of the eyeball; it has a depression in its centre. MACULÆ, an order of skin-diseases. But the affections included under the term can hardly be regarded as diseases; they are merely discolorations of the skin, resulting from some change in the production of the coloring matter. The following are varieties.

1. *Lentigō*.—Small yellowish or brownish-yellow irregularly rounded spots denominated freckles, most abundant on the parts chiefly exposed to the light, as the face, hands, etc. In some cases these spots are congenital; in other cases they seem produced by exposure to the sun's rays; and in both cases they occur to persons chiefly of fair complexion with light sandy hair. When patches of a larger size than that of ordinary freckles are produced by exposure to the sun, the affection receives the name of *Ephelis*. Congenital spots cannot be removed by any applications; but those which depend on exposure may be treated with soothing lotions or liniments, as an emulsion of sweet almonds, or a mixture of lime-water with almond oil.—2. *Pigmentary Nevus*.—Congenital dark discoloration of the skin, with little or no elevation of the surface, and often covered with hair. It occurs usually in small spots, but sometimes in large patches. It is perfectly harmless, and should not be interfered with.—3. *Albinism* or *Leucopathy*.—For this affection, see ALBINOS. When congenital, it may be considered irremediable; but cases of partial albinism, occurring after birth, may sometimes be relieved by local stimulants.

MACVEAGH, *mak-vā'*, WAYNE, LL.D.: lawyer: b. Phoenixville, Penn., 1833, Apr. 19. He graduated at Yale 1853; was admitted to the bar 1856; dist.atty., Chester co. 1859-64; capt. of cav. 1862; chairman republican central committee of Penn. 1863; U. S. minister to Turkey 1870-71; member state constitutional convention 1872-3; chairman of a special committee sent by Pres. Hayes to investigate political affairs in La. 1877; became U. S. atty.gen. in the cabinet of Pres. Garfield 1881; but on the accession of Pres. Arthur he retired; ambassador to Italy 1893-97; appointed U. S. representative at the Venezuela arbitration at The Hague, 1903.

McWHORTER, *mak-hwēr'tēr*, ALEXANDER, D.D.: 1734, July 26—1807, July 20; b. Newcastle, Del.: Presb. clergyman. He graduated at the College of N. J. 1757; was licensed to preach 1758; installed pastor of the First Presb. Church, Newark, N. J. 1759; sent on special mission to N. C. 1764, and went there again by order of congress to induce the royalists to join the patriot cause 1775; chaplain Knox's artil. brigade 1778; and held his Newark pastorate from 1781 till his death. He was a

trustee of the college of N. J. 35 years; member of the committee that framed the constitution of the Presb. Church of the United States; and trustee of the gen. assembly of the church. He received his degree from Yale 1776.

MAD, a. *mǎd* [OE. *mad*, to rave: Swiss, *madeln*, to mutter: Bav. *maden*, to chatter: Dut. *mal*; It. *matto*, foolish, mad: comp. Gael. *amad*, a fool]: disordered in the mind; insane; proceeding from a disordered mind, as a mad action; wild; furious; excited with a violent or unreasonable passion, desire, or appetite; enraged. MAD'LY, ad. -*lŷ*. MAD'NESS, n. the state of being mad; a state of disordered mind; insanity; extreme folly; headstrong wildness of passion; distraction. MAD'DING, a. that is rendered or become mad; mad: N. in OE., the state or condition of the person who has become mad, or is rendered mad. MADCAP, n. *mǎd'kǎp*, a wild, thoughtless, rash person. MAD'-HOUSE, n. a house for the treatment and cure of the insane. MAD'LIKE, a. exceedingly rash; without reason or understanding. MAD'-MAN, n. one deprived of his understanding; one who acts contrary to reason; a lunatic. MAD-STONE, porous stone vulgarly reputed efficacious in hydrophobia: it is applied to the wound made by the bite of a rabid animal, and is supposed to draw out the virus. LIKE MAD, in the manner of a person deprived of reason. TO RUN MAD, to act as one who is deprived of reason.—SYN. of 'madness': derangement; mania; idiocy; frenzy; alienation; infatuation; aberration; delirium; craziness; lunacy; franticness; fury; rage; monomania; kleptomania; dipsomania; bibliomania; hypochondria.

MADAGASCAR.

MADAGASCAR, *măd-a-gās'kér*: third largest island in the world, about four times as large as England and Wales; 230 m. s.e. of Africa, lat. $12^{\circ} 2'$ — $25^{\circ} 35'$ s., and long. 42° — $51^{\circ} 40'$ e.; length, 978 m.; greatest breadth, 350 m.; about 230,000 sq. m.; French colony since 1896; pop. (1901) 3,585,237. Although frequently visited by Europeans since the beginning of the 16th c., M. is yet imperfectly explored. The coasts were carefully surveyed by Capt. W. F. W. Owen, of the British navy, 1823–25; but until lately there has been lack of accurate knowledge as to the geography of the interior. Much light has been thrown upon this by a distinguished French *savant*, Alfred Grandidier, who explored the island 1865–70, crossing it in several directions. Numerous journeys have since been made by members of the London Missionary Soc. and the Friends' Mission; and the new information was embodied in a large map, prepared 1879 by the Rev. Dr. Mullens.

M. consists of two great divisions—(1) an elevated interior region, 3,000 to 5,000 ft. above the sea; (2) a comparatively level country surrounding the high land, not much exceeding 500 to 600 ft. in altitude, and most extensive on the west and south. The elevated interior consists chiefly of Primary rocks, with red clay. It is broken by lines of hills, with numerous fertile valleys, and comprises about a third of the island, n. and e. of its central portion. From this upper region rise the highest mountains, those of Ankàratra, whose summits are nearly 9,000 ft. in height. The lower region of M. is fertile and well wooded, and appears to consist of Secondary strata; on its w. side are three prominent lines of mountains running n. and s. All round the island is a nearly unbroken belt of dense forest, varying from 10 to 40 m. across; and from the s.e. to the n.w. and n. an almost continuous line of extinct volcanic craters has been traced. The climate is temperate and pleasant in the interior highlands, but malarial fever renders the hotter coast-plains unhealthful. The chief rivers flow w. and n.w., and there are many fine bays and harbors on the n.w. coast.

The flora of M. is very rich and varied, and contains large numbers of trees producing valuable timber. Among the most characteristic forms of vegetation are the Traveller's tree (*Urania speciosa*), the Rofia palm (*Sagus ruffia*), the Lattice-leaf (*Ouvirandra fenestralis*), and numerous peculiar orchids and ferns. The fauna is remarkable, and contains several exceptional and ancient forms of life, comprising many species, and even genera, found nowhere else. M. is specially the home of the *Lemuridæ*, there being 36 species already known, including the curious Aye-aye (*Cheiromys Madagascariensis*). The country is remarkably deficient in the larger carnivora and in ungulate animals. Remains of an immense extinct struthious bird (*Aepyornis maximus*) are found, together with its eggs, the largest known ($12\frac{1}{4}$ in. x $9\frac{1}{2}$ in.).

The Malagasy people appear to be derived mainly from the Malayo-Polynesian stock, to which they have numerous affinities. There is an admixture of African blood, especially on the w. side of the island; also an Arab element both on the n.w. and s.e. coasts. It is believed that there are also traces of an aboriginal race. The Hovas, the most advanced, civilized, and intelligent Malagasy tribe, inhabiting the interior provinces, and since the beginning of this century the dominant race, are probably the latest immigrants. All the coast tribes appear closely connected with each other in language; but though there are many dialectical differences, the language of the whole country is substantially one. The cap. is Antanânarivo; pop. officially estimated at 50,000: it is near the centre of the island n. and s., and much nearer the e. than the w. coast. The royal palaces, some large public edifices, and four handsome stone churches in memory of the Christian martyrs under Queen Rânavalona I., are buildings somewhat in European style: there are also schools and colleges, French Rom. Cath. churches, and the numerous large Congl. churches of sun-dried brick. The next town in size is Tamatave on the e. coast (pop. 15,000); Majunga, chief port on the n.w. coast, has pop. about 6,000.

The principal exports of M. are cattle, hides, gum-copal, india-rubber, and rice; and coffee is being cultivated by Creole settlers. The chief trade is from the e. ports to Mauritius and Bourbon. The soil is fertile, and could supply practically unlimited quantities of all tropical productions. Iron is abundant; copper and silver have been discovered, and probably gold exists; but these metals are not worked. As there are no roads or wheeled vehicles, the country is yet very backward in civilization, although there is no lack of manual skill among the people, who excel in weaving, straw-work, carpentry, and the smelting and working of metals. The Malagasy have no ancient literature, but their numerous proverbs, songs, and folk-tales, and their oratorical abilities, give ample proof of intellectual acuteness. In their heathen state they are very immoral and untruthful, and cruel in war; but they are also courageous, affectionate, and firm in friendship, kind to their children and their aged and sick relatives, law-obeying and loyal, very courteous and polite, and most hospitable. Though retaining some traditions of a Supreme Being, they practiced a kind of fetishism, together with divination, curious ordeals, and ancestor worship.

M. was known to and visited by Arab merchants at least a thousand years ago; and settlements were formed by them, as well as by Indian traders, in very early times. It is mentioned by Marco Polo under the name of *Magaster*; but the first European who saw the island was the Portuguese Soares 1506. The Dutch had for a time some settlements; and the French made persistent efforts for nearly two centuries to maintain military posts, but without much success. But they still retain

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the little island of Ste Marie (e. coast); 1840 they obtained the island of Nòsi-bé (n.w. coast); and 1882 they made claim to a protectorate over part of the Sakalava territory on the n.w. coast. In 1883 they bombarded several coast towns, and occupied the port of Tamatave.

Till the middle of the 17th c. M. was divided into a number of independent chieftaincies: about that time the Sàkalàva, a warlike tribe on the s.w. coast, made themselves masters of the whole w. half of the island, as well as of several interior provinces. But in the early part of this century the Hovas, led by two energetic chiefs, Impòina and his son Radàma I., threw off the Sàkalàva yoke, and with the aid of English arms and discipline made themselves virtually kings of Madagascar. They conquered the e. and central provinces, but elsewhere the Hova authority is merely nominal. Radàma (the Peter the Great of M.) abolished the export slave-trade, and gave encouragement to missionaries from the English Congl. churches, who commenced work at his capital 1820. They reduced the language to a written form, gave the people a literature, formed numerous schools, founded Christian churches, and introduced many of the arts of civilized life. But the accession of the Queen Rànavàlona I., 1828, gradually led to repressive measures; all missionaries were expelled 1836, and a severe persecution of the native Christians ensued, in which great numbers perished, preferring as in the early ages of the gospel to die rather than to recede from their confession of Christ. Europeans generally also were for some time excluded from the island. The queen's decease, 1861, ended this period of terror, and M. was reopened to Europeans at the accession of her son, Radàma II. Owing to the young king's follies, and to intrigues with the French, he was put to death 1863, and his wife, Ràsohérina placed on the throne. During her reign (1853-68), steady advances were made, and treaties of commerce concluded with England, France, and America. At the accession of Queen Rànavàlona II., she and her prime minister, convinced of the beneficence and truth of Christianity, which was becoming an important power in the country, declared themselves Christian disciples. The queen and her husband, and many of the nobles, were baptized; and the burning of the royal idols in the following year (1869) caused the whole population of the central province of Imérina and Bétsiléô to put themselves under instruction. Since that time about 1,200 Christian churches have been formed, mostly under care of the London Miss. Soc. (with 72,000 communicants), and nearly 900 schools with 50,000 children under instruction; several colleges and training institutions, as well as hospitals and dispensaries, have been established; while the mission presses are actively at work providing a native literature. Many and great reforms have been wrought, and the more open forms of immorality have been prohib-

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ited by law. The Congl. missionaries had faithful and exceedingly helpful co-workers in agents of the Society of Friends from England. There are also a few Norwegian missionaries. In 1879 all the African slaves in the country were set free; and efforts have been made to improve the military system and the administration of justice, to codify the laws, and to form a kind of responsible ministry. M. is still largely heathen. Rânavâlona III. ascended the throne 1883.

Prior to 1895 the govt. was an absolute monarchy, the queen being assisted by a council of nobles and heads of clans chosen by herself. A French resident, however, with a military escort, resided at the court and controlled foreign relations, so that the country was virtually a French protectorate. Much friction prevailed 1893-4 between the government and the French authorities, and finally France decided to make her protectorate of the island effective. The M. govt. declined to submit, and so a French expedition was prepared. After overcoming the climatic difficulties and surmounting the many natural obstacles to transport, the capital was entered 1895, Sep. 30. Gen. Metzinger was appointed milit. gov. of the city, and negotiations for peace, subject to the ratification of the French republic, were concluded. Affairs soon settled down. The treaty recognized the French protectorate with its power to maintain in the country the forces necessary to uphold the protectorate. The resident general was given control of the interior administration of the island and also of its exterior relations.

In 1896, Dec. 1, M. Laroche was appointed resident-general, and M. Paul Bourde sec.-general of the residency. Later that month news was received of the assassination of Mr. and Mrs. Johnson, the Friends' missionaries at Arivonimamo, on Nov. 22. On Dec. 11 a decree placing the country's affairs under the control of the French colonial office was signed. Owing to the anti-foreign feeling existing throughout the country, all Europeans were ordered to resort to the capital (Dec. 13).

In France public opinion condemned the treaty concluded with the queen by Gen. Duchesne, and M. Laroche took out with him a new convention maintaining the queen with all her prerogatives and honors in the island, subject to the control of the resident-general, but giving France sovereign rights, especially as to foreign relations and the customs system.

In June (1896), when the Méline ministry came into power in France, M. Hanotaux, as foreign minister, brought in a bill declaring M. a French colony, and this was carried by the chamber of deputies June 21. The existing treaties between M. and foreign powers thus lapsed. It was announced that, though the Hova governors could not be reinstated, native administrators would, as far as possible, be employed. The immediate emancipation of all slaves was promised.

In July (1896) Rainilaiarivony, the ex-premier, died and revolutionary disturbances, fostered by leading Hovas, broke out and many whites were massacred. The small

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number of French troops on the island made it impossible to quell the disturbances, and by Sep. over 20,000 men were in insurrection. On the 21st M. Laroche was recalled and Gen. Gallieni was appointed resident general and commander-in-chief. On the 28th he court-martialled and shot two M. officials of high rank, one the queen's uncle. He declined to call on the queen, asserting it was her duty to visit him, and this she did, but subsequently she was exiled. Not many days after the flag of M. was abolished, being replaced by the French tricolor. — See Ellis's *History of M.* (1838), *Three Visits to M.* (1858), and *The Martyr Church* (1870); Sibree's *M. and its People* (1870), and *The Great African Island* (1880); *L'Ile de M.*, by E. Blanchard; *Histoire physique, naturelle, et politique de M.*, by A. Grandidier (i.-iv., Par. 1876-80).

MADAM, n. *măd'ăm*, colloquially contracted MA'AM, *măm* [F. *madame*, madam—from *ma*, my; *dame*, lady: L. *măă domīna*, my lady]: title now used in addressing women, especially married women, of every degree above the lowest; formerly applied only to ladies of rank: it is the French equivalent to our 'Mistress' which we abbreviate to Mrs. and absurdly pronounce Missis. It is colloquially, a term of address for mistress or lady. It sometimes has a use not complimentary, as 'she is a proud *madam*'. MESDAMES, *mă-dâm'*, plu. of *madam*; though some French phrases admit of plu. *madames* or even *madame*.

MAD'-APPLE: name given sometimes to the Apple of Sodom (*Solanum Sodomeum*), sometimes to the fruit of the Egg-plant (q.v.) and sometimes to the large Galls (q.v.) known as *Mecca* or *Bussorah Galls*, which also are called Apples of Sodom.

MADAR': see MUDAR.

MADDALONI, *măd-dâ-lō'nē*: city of s. Italy, province of Caserta, 14 m. n.n.e. of Naples; an industrious and thriving place, with a mediæval castle, a noble aqueduct, an old college, and several fine palaces and churches. Pop. (1881) 17,072.

MADDEN, v. *măd'n* [from MAD, which see]: to make mad; to become mad; to act as one mad. MADDENING, imp. *măd'nīng*, making mad or very angry. MADDENED, pp. *măd'nd*, rendered mad.

MADDER.

MADDER, n. *măd'dér* [AS. *mæddere*; Iccl. *madra*; Dut. *meed*, madder], (*Rubia*): genus of plants whose root is much used in dyeing red. MAD'DERING, n. the process of dyeing with madder.—*Madder* is a genus of plants of nat. ord. *Rubiaceæ*, very nearly allied to the genus *Galium* or Bedstraw (q.v.), and differing from it chiefly in having a juicy fruit resembling two small berries growing together. The species are found in tropical and warmer temperate parts of the old and new worlds. The most important is the COMMON M. or DYER'S M. (*R. tinctorum*), native probably of s. Europe as well as of Asia; now very extensively cultivated in most European countries, the E. Indies, China, etc. It is a perennial, with weak stems and whorls of 4-6 elliptic or lanceolate glossy leaves, the stem and leaves rough with sharp prickles; small greenish yellow flowers, and black fruit.—Munjeet (q.v.), or INDIAN M. (*R. munjista* or *cordifolia*), ranks next in importance.—The roots of *R. peregrina* and *R. lucida* also are used in parts of the Levant. *R. peregrina*, found in s.w. England, is called WILD MADDER: it is very similar to *R. tinctorum*. The roots of *R. relbun* and *R. Chilensis* are used in Chili and Peru.

There is no material of greater importance to dyers than M. (*R. tinctorum*), not only from the great beauty of the colors obtainable from it, but also from the ease with which it can be worked, and the great variety of its applications. Although the M. plant thrives best in warm climates, it may be and is successfully cultivated in northern districts. The Dutch province of Zeeland has long been celebrated for its large crops of M.; and until about 40 years since, British dyers rarely used any other than Dutch M., which was always sent ground and packed in large casks; but with the improvements in dyeing, it was discovered that the roots grown in warmer localities had much superior qualities, and could be made to produce other and more beautiful shades of color. Besides genial temperature, M. requires rich, deep soil and careful cultivation. It is propagated usually by cuttings or by shoots from the stocks of old plants; these are set about 12 inches apart, and in rows, three ft. from each other; the planting is done in spring; and sometimes the roots are lifted at the usual harvest-time for madder (Oct. or Nov.). In France and Germany, the markets are supplied with one year old (called by the Germans *röthe*), 18 months old, and three years old, which last is the best, and called by the Germans *krapp*, or M. *par excellence*. The roots are carefully raised with forks, to prevent breaking if possible; and after the soil is thoroughly shaken off, they are dried in stoves, and afterward thrashed with a flail, to remove the loose skins and any remaining soil still adhering; they are then cut, or broken in pieces, and packed for sale, or they are sent to the mills to be ground. In Turkey and Italy, where the solar heat is great, the stove is dispensed with, the roots being dried in the sun. The more the roots are freed from the epidermis, the better

the quality of the M.; hence, before it is ground in France, many manufacturers employ mechanical means, chiefly sieves worked by machinery, which rub off and separate the soft, dark-brown skin which covers the roots—this process is called *robaye*. One-year-old roots cannot be profitably dressed in this way, and are therefore ground with the epidermis. Much of the inferior Dutch M. is also ground without dressing, and is called *mull* in trade. The grinding is effected in mills with vertical stones, and the meal is passed through sieves of different degrees of fineness, which gives rise to various qualities in the market. These qualities are numerous, and have special marks to distinguish them, well known to merchants. The M. from Turkey and from India never comes to western countries ground; the roots are merely broken into pieces an inch or two in length, and packed in bales. Very small quantities of M. occasionally come from Russia; it is the produce of the govt. of Baku, on the Caspian Sea, and is said to be the finest in the world.

As might be expected of a substance of such vast commercial and manufacturing value, M. has undergone most elaborate chemical researches. Its dyeing quality has been known for at least two thousand years, and its medicinal qualities are mentioned by Pliny and Dioscorides. Pliny, referring to its value as a dyeing material, says: 'It is a plant little known except to the sordid and avaricious, and this because of the large profits obtained from it, owing to its employment in dyeing wool and leather.' The M. of Ravenna was, according to Dioscorides, the most esteemed. Its cultivation in Italy has never been discontinued; and under the present enlightened government, it has received such impetus that the exports of the Neapolitan provinces alone, in one year, exceeded in value \$1,200,000. It was about the beginning of the 19th c. that the coloring matter of M. began to attract especial attention. It had long before been noticed that cattle which used the green parts of the plant as fodder had a red color communicated to their bones, which was removed only by discontinuing this kind of food for a considerable time. This showed the coloring matter to be capable of isolation; dyers also began to suspect that the color produced was a combination of two—one red and the other a purplish brown. But Roubiquet, French chemist, about 1820, demonstrated that M. contains two distinct colors, capable of being isolated and used separately; he called them Alizarine and Purpurine—the former, he asserted, gave the bright red, and the latter the purple red colors. Practically, Roubiquet's statement may be held correct; but the recent and more elaborate researches of Dr. Schunck, of Manchester, England, have shown the composition of M. to be very complicated. At the meeting of the British Assoc. 1861, he showed the following chemical principles, all obtained from this remarkable root: 1. Rubianine; 2. Rubianic Acid; 3. Rubianite of Potash; 4.

MADDER-LAKE—MADEIRA.

Purpurine; 5. Chlorrubian; 6. Phthalic Acid; 7. Alizarine; 8. Rubiadine; 9. Chlorrubiadine; 10. Rubiafine; 11. Rubiacine; 12. Rubian; 13. Verantine; 14. Perchlorrubian; 15. Rubiagine; 16. Grape-sugar; 17. Succine. Artificial alizarine, first produced 1869, is manufactured on a large scale, and is now extensively used by dyers. It is one of the numerous series of aniline colors.

Dyers employ M. for giving the celebrated Turkey-red to cotton goods, and for this purpose use means for developing the alizarine; and for purples, lilacs, and pinks, which are obtained by means of the purpurine. Manchester, Glasgow, Paisley, Alexandria, and other places on the banks of the Clyde, are chief British seats of this industry; the imports of M. into Britain 1875 amounted to 126,152 cwt. (value £410,993), but in 1882 had decreased to 23,397 cwt. (value £33,207).

MADDER-LAKE: painter's color, made from madder, by boiling it in a solution of alum, then filtering the liquid, and adding sufficient carbonate of soda to cause precipitation of the alizarine or red coloring matter of the madder, which alone has been dissolved by the boiling solution of alum. This lake is used as either an oil or water color.

MADDING: see under **MAD**.

MADE: pt. or pp. of **MAKE**, which see.

MADEIRA, n. *ma-dē'ra*: a highly esteemed wine produced in the island of *Madeira* (q.v.). **MADEIRA NUT**, edible fruit of a large timber tree (*Suglans regia*); often called the English walnut. From its kernel a drying oil is made which is valuable in varnishes.

MADEIRA, *ma-dē'ra*, Pg. *mâ-dã'ê-râ*: island (one of a group of five known as the Madeiras—three being uninhabited rocks) in the n. Atlantic Ocean, off the n.w. coast of Africa, from whose nearest point it is 390 m. distant; lat. 32° 43' n., long. 17° w.; 280 m. n. of Teneriffe, in the Canaries, and 620 m. s.w. of Lisbon. M., and the other islands of its group form a province of Portugal with 505 sq. m.; pop. (1900) 150,528, including the adjoining small island of Porto Santo, of whom 200 are English resident. The three uninhabited islands, known as *Desertas*, are abt. 11 m. s.e. of M.; they present on all sides almost inaccessible precipices. The largest is more than 6 m. long, and its highest point is 2,000 ft. above the sea. The *Desertas* are conspicuous in the sea-ward views from Funchal (q.v.). The island of M. is wild and grand in scenery. Its coasts are steep and precipitous, rising 200 to 2,000 ft. above sea-level, comprising few bays or landing-places, and deeply cut at intervals by narrow gorges, which give to the circumference the appearance of having been *crimped*. From the shore, the land rises gradually to its highest point, the Pico Ruivo, 6,050 ft.; there are several other peaks more than 4,000 ft. high. It is remarkable for deep valleys, the most noted being that of 'Curral,' which from brink to bottom has a depth of 2,060 ft. M. is of volcanic origin, and slight earthquakes

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sometimes, though rarely, occur. The lower portions of the island abound in tropical plants, as the date-palm, banana, custard-apple, mango, sweet potato, Indian corn, coffee, sugar-cane, pomegranate, and fig. The fruits and grains of Europe are cultivated to an elevation of 2,600 ft. above sea-level, and the vine and sugar-cane on the lower grounds; above these are found timber (including the chestnut, whose fruit is used extensively by the inhabitants, pine (*Pinus maritima*) used as fuel, fern, grass, and heath, and the scant herbage of alpine regions. M. produces 80 or 90 plants peculiar to itself, but the flora in its general characteristics resembles that of countries around the Mediterranean Sea. The grape disease has, within recent years, been almost universal, and wine has not been made in such quantity as formerly. M. has no indigenous mammalia, but the ordinary domestic animals, with rabbits, rats, and mice, have been introduced by the Portuguese. The climate is remarkable for constancy. There is a difference of only 10° between the temperatures of summer and winter; the thermometer in Funchal (cap. of the island) showing an average of 74° in summer, and of 64° in winter. At the coldest season, the temperature rarely is less than 60° , and in summer it seldom rises above 78° ; but sometimes a waft of the *lesté*, or east wind, raises it to 90° . The temperate and constant warmth of its climate has made it a favorite resort for invalids affected by pulmonary disease. Besides the English church, there are other places of worship, including a Presb. church in connection with the Free Church of Scotland. The educational institutions comprise the Portuguese College and Lancasterian and govt. schools. Funchal (q.v.) is the port of the island: 751 vessels (403 of them British), of 798,412 tons, entered the port 1888. The imports (1888), cotton, woolen, and linen manufactured goods, iron, flour, earthenware, Indian corn, rice, oil, and timber, had a value of abt. \$1,043,535; exports (1888), wine, sugar, citron, embroidery, wicker-work, coal, salt-beef, and hides, \$927,225, the wine export alone being \$843,150—an increase of \$210,000 on 1887. About 6,000 pipes of wine are produced, 600 tons of sugar, and 240,000 gallons of spirits. The trade is chiefly with Great Britain. The vine was introduced 1421; the grapes mostly are white. The varieties of wine most sought after, before the oidium disease interfered with the culture, were Malmsey, dry Madeira, Sercial, and Tinto. The M. wine is imitated in Europe on a vast scale: genuine M. is rare, especially since the disease attacked the vines in the island. In recent years the oidium disease seems to have been checked by the use of sulphur, but the phylloxera affects the vineyards. M. wine is an excellent heavy wine, but is not in fashion as formerly, being supplanted by the lighter French and German wines.

The inhabitants of M. are of mixed Portuguese, Moorish, and Negro descent; they are of vigorous frame, lively and industrious, but totally uneducated. M. was

formerly covered with forests, whence its name—the Portuguese word *madeira* signifying timber. The group to which this island belongs, sometimes called the Northern Canaries, was discovered 1416, and was colonized by the Portuguese. See White's *Madeira* (2d ed. 1860); Miss Taylor's excellent work *Madeira* (1882).

MADEIRA, or MADERA, *mâ-dā'râ*, or CAYARA, *kî-â-râ'*: important river of Brazil, affluent of the Amazon, has its origin in the confluence of several rivers, the chief of which are the Beni, Mamore, Madalena, and Stanez, lat. about 10° s. It has a n.e. course of 700 m. for the last 500 m. of which it is navigable, the upper 200 m. being obstructed by numerous cataracts; and it falls into the Amazon in lat. 3° 25' s., long. 59° 45' w. Including the Mamore, the entire length is about 1,500 miles.

MADemoISELLE, n. *măd'mwă-zěl'* or *măd'mō-ă-zěl'* [F.—from *ma*, my; *demoiselle*, damsel, young lady]: the title given to a young unmarried Frenchwoman in France; a miss.

MĀDHAVA: appellation of the Hindu god Vishn'u (q.v.), frequent in Hindu mythology and Sanskrit poetry.

MĀDHAVĀCHĀRYA (i.e., *Mādhava*, the Achārya, or spiritual teacher): one of the greatest Hindu scholars and writers that graced the mediæval literature of India: b. probably near the beginning of the 14th c.; d. at the age of 90 years; reported to have been native of Pampa, village on the Tungabhadra river. He was prime-minister under the kings of the Deccan. M. is famed for his numerous and important works relating to the Vedic, philosophical, legal, and grammatical writings of the ancient Hindus. His learning and wisdom were so eminent, that he was supposed to have received them from the goddess Bhuvanes'warî (consort of S'ivā), who, gratified by his incessant devotions, became manifest to him in a human shape, conferred on him extraordinary knowledge, and changed his name to Vidyāran'ya (Forest of Learning), a title by which he is sometimes designated in Hindu writings. All the differing traditions about M. agree in ascribing the origin of Vijayanagara to Mādhava. Among his works, the principal are his commentaries on the Rig-, Yajur-, and Sāma-veda (see VEDA): a summary account of 15 religious and philosophical systems of Indian speculation; some treatises on the Vedānta philosophy; and a grammatical commentary on Sanskrit radicals and their derivatives. His chief work is the series of his commentaries on the Vedas, indispensable to one who seeks to penetrate the sense of those ancient Hindu works. Sundry inaccuracies—whose correction however is usually afforded by himself—have been unduly exaggerated by some modern scholars in Sanskrit, who, discarding his aid in establishing the true sense of the Vedas, have given to the public commentaries whose inferiority—it is asserted—becomes clear on comparison with his. Some of Mādhava's works seem to have been lost.—See VEDA,

MADHU'CA—MADID.

MADHU'CA: see BASSIA.

MADIA, *mā'dī-a* (*Madia*): genus of plants of nat. ord. *Compositæ*, sub-ord. *Corymbiferae*, having seeds without pappus, the outer ones situated between the leaves of the involucre, the flowers yellow, the exterior ones rather shortly ligulate, those of the disk tubular. The plants of this genus are annual, of upright habit, rough with glandular hairs, and very viscid; they are important for their seeds as a source of vegetable oil. *M. sativa*, native of Chili, there called *Madi* or *Melosa*, is generally cultivated as an oil-plant. It is 3–5 ft. high, has ovato-lanceolate, entire leaves; the flowers terminal, and crowded on the leafy branches. It has been known in Europe since the beginning of the 19th c., but was cultivated in the fields as an oil-plant first in 1839. The result of experiments in its cultivation have not met all expectations; yet it deserves attention, as it is only annual, does not suffer from frost, does not demand very good soil, and produces excellent oil. *M.* oil is richer than poppy oil, almost entirely inodorous, of bland, agreeable taste, and very suitable for oiling machines, as it does not freeze even at a cold of 10° F. Its oil-cake is good food for cattle. The straw and chaff have poisonous properties. It is, however, a great disadvantage that the flowers ripen gradually in succession, so that the first are fallen off, when the last are not yet ripe.—Another species, *M. elegans*, is cultivated in flower-gardens.

MADID, n. *māḍ'id* [L. *madidus*, moist]: in OE., moist; wet.

MADISON.

MADISON: city of Indiana, co. seat. of Jefferson co.; on the n. bank of the Ohio river, 90 m. below Cincinnati, 44 m. above Louisville, with steamers plying daily both ways. It is a terminus of one division of the Jeffersonville Madison and Indianapolis railroad. It was founded 1808, has a fine location with a background of hills, is well-built, lighted with gas and supplied by water through an aqueduct. It has good public schools, a public library, a daily paper and other journals, adequate banking facilities, and a large provision trade. Among the industries are pork-packing and manufacture of flour; there are foundries, breweries, yards for building of boats, tanneries, and factories of engines, boilers, and furniture; also extensive brick-yards. Pop. (1860) (1870) 10,709; (1880) 8,945; (1890) 8,936; (1900) 7,835.

MADISON, *măd'i-son*: borough, Morris co., N. J.; on the Delaware Lackawanna and Western railroad; 4 m. s.e. of Morristown, 28 m. w. of New York. It is beautifully situated in the mountains, has a few manufactories and one national bank (cap. \$50,000), and is chiefly noted as the seat of Drew Theological Seminary (q.v.) and the summer home of many Newark and New York business men.—Pop. (1890) 2,469; (1900) 3,754.

MAD'ISON: city, cap. of Dane co., and of the state of Wis.; on the Chicago and Northwestern and six branch railroads; 75 m. w. of Milwaukee, 130 m. n.w. of Chicago; 210 ft. above Lake Michigan, 788 ft. above sea-level. It is beautifully situated in the four-lake region, on a prairie isthmus between Lakes Mendota and Monona, with Lakes Waubesa and Kegonsa near by—all discharging into the Catfish tributary of Rock river. It is 3 m. long and 1 m. wide. Its streets are wide and regular, and adorned with costly residences. M. has excellent water and sewage works, gas and electric light plants, and street railroad service. The notable buildings are the state capitol, of limestone (cost \$500,000), in the centre of a picturesque park of 13 acres; U. S. post-office and court house building (cost \$400,000); co. court house and jail, near the park; Univ. of Wis., with its cluster of attractive buildings, 1 m. w. of the capitol; state hospital for the insane, on the n. shore of Lake Mendota, 4 m. n. of the capitol; 569 ft. long with 393 acres of land; soldiers' orphans' home, on the shore of Lake Monona, 1 m. from the park; commodious high schools, 6 ward schools, and commercial college; and 12 churches. There are 1 national bank (cap. \$100,000), 3 state banks (cap. \$225,000); historical soc., state agricultural soc., univ. and societies', and M. institute libraries; and 11 daily, weekly, and monthly publications. The industrial interests comprise manufactories of agricultural implements, ale and beer, furniture, foundry and machine shop products, carriage and wagon factories, stereotype foundry, printing press factory, flour mill, woolen goods, saddlery and harness, etc. M. was made the cap. of Wis. 1836, when there was but one log cabin on the prairie. Pop. (1880) 10,324; (1890) 13,426; (1900) 19,164.

MADISON.

MADISON, JAMES: 1751, Mar. 16—1836, June 28; b. Port Conway, Va.: fourth president of the United States. The oldest of 12 children in an old Va. family, he received a thorough education, from private tutors, preparatory to entering Princeton College, where, 1772, he graduated, but remained another year for the study of Hebrew. Returning home he studied theology, history, and law, while teaching his younger brothers and sisters. His talents were unusual, and his industry very great. In the knowledge of history and constitutional law he was without a peer among the statesmen of his time; while his theological attainments were scarcely less eminent. His learning was equalled by his precociously sober and profound judgment, keen perception, and sterling integrity. In 1774, at 23 years of age, he was made one of a committee of safety by the citizens of Orange co.; and 1776, he was elected a delegate to the state convention at Williamsburg, which urged an immediate declaration of independence, and appointed him on the special committee for framing a state constitution. On this committee he displayed all that liberality of spirit, wise foresight, and logical precision of thought and expression that later proved so useful to him and to the country. He was chosen a member of the first state assembly under the new constitution, and though defeated for a second term because he would not resort to the then prevalent methods, of the 'practical politician,' the assembly, 1778, elected him a member of the governor's council; and 1780, he was chosen a delegate to congress. There he showed his wisdom by approving the proposed surrender to Spain of our rights to the free navigation of the Mississippi, and by urging, against his constituents, the adoption of the impost law proposed by congress, which though at first refused was finally adopted by Va. In 1784, he was again elected to the state assembly, where he advocated every measure looking to the strengthening of the federal government. He supported the amendment giving congress the control over the foreign trade of the states; secured the passage of a port bill restricting the entry of foreign ships to certain specified ports; procured the abolition of all religious tests for civil office-holders in Va.; and steadfastly opposed the craze for issuing paper money. But perhaps his most important work at this time was in bringing about the appointment of commissioners from Va. to confer with commissioners from the other states with reference to the country's trade and the advisability of giving the regulation of the same to the federal government. Commissioners from Va., Del., Penn., N. J., and N. Y. met at Annapolis, 1786, Sep. 11. Hamilton prepared an address which was adopted, calling another convention at Philadelphia on the second Monday of May, 1787, and committing to it not only the regulation of commerce, but 'other important matters.' Sanctioned by congress, the convention met. M. was a delegate from Va., with Washington, Randolph, Mason,

and others. They presented to the convention the famous 'Virginia Plan,' of which M. was chief author, and which embodied the main principles of the federal constitution, which made a nation out of a loose confederacy of independent states. Moreover the adoption of this constitution by the slave states was brought about only by M.'s compromise of the 'three-fifths rule,' by which 5 slaves were made to count as equal to 3 individuals in the assessment of population for taxation or representation. By this was the formation of the federal union made possible. Next he engaged with Hamilton in writing *The Federalist*, the most profound and at the same time most practical work on political science ever produced in America. Of the 85 papers that came out under that title, 51 were by Hamilton, 29 by M., and 5 by Jay. M.'s share would probably have been larger had he not had to return to Va., 1788, March, to attend the state convention for ratifying the constitution, which ratification was accomplished mainly through his influence, against men like Patrick Henry, Mason, Monroe, Harrison, and Tyler. When the time came for choosing senators for the first U. S. senate, M. was defeated by the anti-federalists; but they could not prevent him from being elected to the house of representatives, of which he at once became a leader. He proposed raising a revenue by tonnage and tariff duties; establishing the executive departments of the treasury, of war, and of foreign affairs; he, too, offered the ten amendments to the constitution, which were made a part of it 1791, and which were meant to supply the place of a bill of rights. When the division into two political parties took place, after the adoption of the constitution, M. joined and soon became a leader of the Republican party, against Hamilton and the Federalist party, whose financial policy of establishing a national bank, and assumption of state debts by the national govt., he strenuously opposed. At the close of Washington's second administration, M. retired from public life for a time, having married, about two years before (1794, Sep.), the beautiful widow of John Todd of Philadelphia, who as 'Dolly Madison' is remembered as the most popular and tactful leader of society at our national capital. She was only 26 years old, and survived him 13 years, dying 1849. With her he retired to his newly built home at Montpelier, Orange co., Va.; but only for a short time. After having drawn up the resolutions adopted by the Va. legislature protesting against the government's alien and sedition acts as being unconstitutional, M. was again elected to the state assembly 1799; and 1801 was made sec. of state by Jefferson, though his influence was less marked, and perhaps his ability also, during this period of his career than it was during the constructive years of our national history. In 1808, M. was elected president, receiving 122 out of the 175 electoral votes cast. Jefferson's embargo act had been repealed by this time, and one substituted declaring non-inter-

MADISON—MADISON UNIVERSITY.

course with France and England. False representations by France caused this non-intercourse to be declared only against England. Hence began the war with England, which had been coming on for some time, and for which the American people seemed eager. M. was nominated for a second term with the understanding that he should adopt a war policy. 1812, June 18, war was declared. In autumn M. was re-elected by 128 out of 217 electoral votes. His prosecution of the war, however, was feeble, and caused much dissatisfaction; for he was by natural disposition a man of peace; his convictions were against this particular war, as were those of many others; he had yielded to a factional demand for the war mainly for political reasons. 1814, Aug., the city of Washington was captured by the British and its public buildings ruthlessly burned; the president fled in one direction, Mrs. M. in another. Four months later peace was declared; and two years afterward, at the expiration of his second term, 1817, M. retired to his home at Montpelier, where he spent the remaining nearly 20 years of his life in tranquillity among his books and numerous friends. As a constructive statesman and a founder of our national government and life, he must ever be mentioned with Washington, Hamilton, and Jefferson; as an executive he was less capable and less popular than many others; as a scholar he was broad and profound to a remarkable degree; as a man he was gentle, kind, and dignified, beloved by all who knew him, and respected by all as one whose character was beyond the possibility of reproach even by his bitterest foes. His writings on various topics were bought in ms. by congress from Mrs. M. for \$30,000. The *Letters and Other Writings of James Madison*, were published in Philadelphia in 4 vols. 1865. The best biographies are Wm. C. Rives's (Boston, 3 vols.); and S. H. Gay's in 'American Statesman' series (Boston, 1 vol.).

MADISON, JAMES, D.D.: 1749, Aug. 27—1812, Mar. 5. b. near Port Republic, Va.: Prot. Episc. bp. of Va. He graduated at William and Mary College 1772; was admitted to the bar, but abandoned law for theol.; chosen prof. of natural philosophy and mathematics in William and Mary College 1773, and pres. 1777; was ordained in London, England 1775; pres. of the first convention of the Prot. Episc. Church in Va. 1785; elected first bp. of Va., and consecrated in Lambeth Palace (q.v.) 1790; and was active as college pres. and bp. till his death. He received his degree from the Univ. of Penn. 1785 and William and Mary College 1796.

MADISON UNIVERSITY (now COLGATE UNIVERSITY, *kōl'gāt*): at Hamilton, Madison co, N. Y., Bapt. institution, originated 1820 when the 'Hamilton Literary and Theological Institution' was founded; which was in 1832 changed into 3 institutions under control of one board of trustees, viz., Hamilton Theol. Seminary, Madison Univ., and Colgate Acad.; in 1846 these were united

MADOC—MADONNA.

and chartered as M. U.; 1889, June 20, the name was changed to COLGATE UNIVERSITY, and the change was ratified by final authority 1890, Mar. It has an endowment of about half a million dollars, raised since 1864, an annual income of about \$40,000, besides unproductive property worth fully \$150,000. It is situated back of the town of Hamilton, about 60 ft. above the Chenango river, in the midst of a beautiful landscape, with plenty of pure spring water and pure air. Besides the acad. building, the presidents' and professors' houses, boarding halls, and gymnasium, the grounds contain the three university edifices, West College, East College, containing the halls of the literary societies, and Alumni Hall with its 10 lecture rooms, library, college chapel, and large audience room, 107 x 73 ft., for use at commencements and other public occasions. In West College, besides students' rooms and dormitories, are contained the museums of foreign curiosities and of nat. history, the laboratory, and rooms assigned to geology and the physical sciences. These are thoroughly equipped with specimens and the latest scientific apparatus, affording every advantage to students in the scientific course. Equal attention is given to the classical department. The library contains more than 15,000 vols. The univ. has a full corps of efficient instructors in its various departments; and pays \$4,500 annually to students for scholarships, over \$5,000 more in aid of poor students, and \$500 for prizes.

MADOC, *măd'ok*: son of Owen Gwynnedd, a Welsh prince: 12th c; believed by many of his countrymen to have discovered America about 300 years before Columbus. Compelled, it is said, by civil strife to abandon his native land, he sailed westward 1170 with a small fleet, and after a voyage of several weeks, reached a country whose productions and inhabitants were quite unlike those of Europe. Here he lived a long time; then returning to Wales, he gave an account of the new land that he had discovered, equipped another fleet, set sail again, and was never more heard of. The story of M. is in the *Historie of Cambria, now called Wales, a part of the famous Yland of Brytaine, written in the Brytish Language above 200 years past by Caradoc; translated into English by H. Lloyd, gent.; corrected, augmented, and continued by David Powell* (London, 1584). See also Owen's *British Remains* (1777). There is considerable reason for suspecting the genuineness of this Welsh tradition; and even if true the Northmen have a prior claim to the discovery of America, for it is beyond doubt that Greenland and the New England States were visited, if not colonized, by Icelanders or Norwegians at a much earlier period: see NORMANS. Southey made the story of M. the subject of one of his so-called 'epics.'

MADONNA, or MADONA, n. *mă-dŏn'nă* [It. *madonna*, my lady—from *mia*, my; *donna*, lady: L. *mēā domīna*, my lady]: term equivalent to *madam*, but applied particularly to the Virgin Mary, and to the pictures represent-

ing her. The earliest Christian art did not attempt any representation of the mother of Christ; such representations appeared first after the 5th c., when the Virgin was declared to be the 'Mother of God.' The face of the mother is generally full, oval, and of a mild expression; a veil adorns the hair. At first the lineaments of the Virgin's countenance were copied from the older pictures of Christ, according to the tradition which declared that the Savior resembled his mother. A chronological arrangement of the pictures of the Virgin would exhibit in a remarkable manner the development of the Rom. Cath. doctrine on this subject. The M. has been a principal subject of the pencils of the great masters. The grandest success has been achieved by Raphael, in whose pictures of the M. there prevails now the loving mother, now the ideal of feminine beauty, until in that of St Sixtus he reaches the most glorious representation of the 'Queen of Heaven.' Among symbolic representations may be mentioned Mary with the white mantle, i.e., the mantle of love under which she receives the faithful; and the Virgin with the half-moon or with the globe under her feet, according to the meaning ascribed to Rev. xii. The Virgin was never represented without the Child until comparatively recent times.—For further information, see Mrs. Jameson's work, *Legends of the Madonna* (Lond. 1852).

MADOQUA, *măd'o-kwă* (*Antilope Saltiana*, or *Neotragus Saltianus*): species of antelope, abundant in Abyssinia; one of the smallest, if not the very smallest of horned animals, being scarcely the size of a hare. Its legs are long and slender; its tail very short; its horns short and conical, the males alone having horns; the general color is gray, the fore-parts reddish.

MADRAS, *ma-drās'*: one of the several local governments of British India, still commonly called the 'presidency of M.' occupying the s. part of the Indian peninsula. It comprises 22 British districts, 3 agencies under special administration, and 5 native states; area, British districts, 141,726 sq. m.; pop. (1901) 38,209,436; native states, area, 8,453 sq. m.; pop. 3,764,182; total pop. of all M., 42,397,522. On the Malabar Coast, where more rain falls than on the e. side of the peninsula, the mean temperature is 78°; on the Coromandel coast the average is 84°, and the thermometer frequently indicates 110° in the shade. Rice, cotton, indigo, coffee, sugar, maize, millet are extensively cultivated, and the minerals are iron, manganese, copper, magnesia, antimony, lead, and silver. The chief manufactures are muslins, cotton, silks and carpets, saltpetre and salt.

MADRAS' (called by the natives *Chennapatnam*, 'the city of Chennappa,' an Indian prince): the third city of British India, cap. of the govt. of M.; on the Coromandel coast, the w. shore of the Bay of Bengal, lat. 13° 5' n. No commercial centre of equal size and importance is so unfortunate in its site. The roadstead is open to every

wind, except that from the w., and in a sudden gale, vessels are obliged to run for the open sea. The city is not on a navigable river; the soil of the vicinity is but moderately productive; and during the hot months, the thermometer, even in a well-appointed room, rises to 96°. In calm weather., the surf breaks 300 ft. from the shore, and its wave is 3 ft. in height; during a storm, it breaks 1,000 ft. from shore, with a wave 14 ft. high, and at such a time any attempt to land, even in the boats of the natives built for this purpose, is most dangerous. The seasons are distinctively marked by the monsoons, the n.e. from Oct. to Feb., and the s.w. from May to Oct. The force of the s.w. monsoon, however, is so much broken by the Ghats that its influence is hardly felt. During the hot months, the climate of M. is pleasantly modified by a sea-breeze, called by the residents 'the doctor,' which sets in at noon, and lasts till night. The city, with its suburbs, nine in number, extends along the coast for 9 m., and has an average breadth of $3\frac{1}{2}$ m. On the coast, and midway between the n. and s. extremities of the city, is Fort St. George, strongly fortified, garrisoned usually by a regt. of European troops and two companies of artillery; also, three regiments of native infantry are usually stationed here. Within the fort are the council-house and a number of civil and military offices. The district of Black Town, n. from the fort, lies low, in some places only 6 inches above sea-level at spring-tides. It is defended, like the fort, from the encroachments of the sea by a strong stone bulwark. In Black Town are the Seven Wells, the water of which, filtered through a bed of fine sand, is singularly pure and wholesome. The principal buildings and institutions are Government House, a handsome edifice, though much inferior to the similar establishments in Calcutta and Bombay; the light-house, n. of the fort, 128 ft. above sea-level, and having a light, said to be one of the most brilliant in the world; the Scotch Presb. Church of St Andrew, founded 1818, a stately and beautiful edifice; the university, with European professors, and numerous teachers, European and native, and with a valuable museum and a library; St. George's Cathedral, giving a magnificent view of the city and its vicinity, and containing several monuments by Chantrey (including one of Bp. Heber), and some figures by Flaxman. There are also military male and female orphan asylums, a medical school, a branch of the Royal Asiatic Soc., the Madras Polytechnic Institution, the Govt. Observatory, a mint, the churches of numerous Christian denominations, and the Madras club, to which members of the Bengal and Bombay clubs are admitted as honorary members. Madras stucco, or *chunam*, is largely employed in decoration of public buildings. When laid upon walls, pillars, etc., dried and polished, it has the appearance of the finest Parian marble. The first British settlement on this coast was at Armagon, 60 m. n. of M.; but the seat of the present fort being granted by a native prince 1639, a



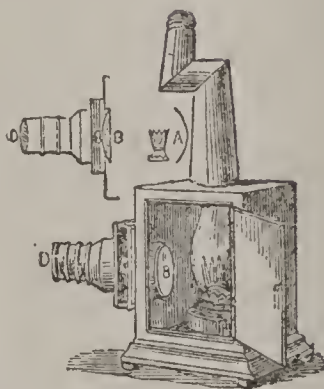
Madrepora longicyathus.



Mahogany (*Swietenia Mahagoni*).



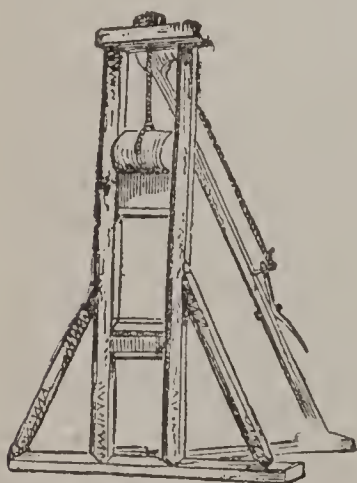
Madder Plant (*Rubia tinctorum*),



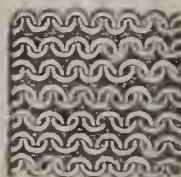
Magic Lantern: B, Plano-convex lens; D, Double-convex lens; C, Place for transparencies.



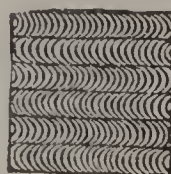
Madrepora muricata



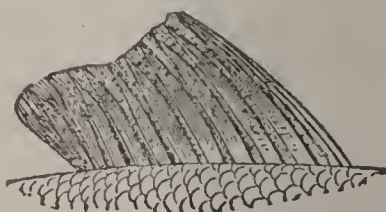
Maiden, Museum of the Society of Antiquaries, Edinburgh.



Chain Mail.



Ring Mail.



Fin of Malacopterygian.

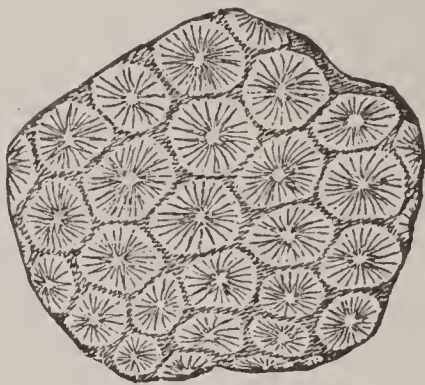
MADRAS SYSTEM—MADEPORE.

removal took place, and the nucleus of the present city was formed. M. is now the residence of the government of the presidency, including the gov., members of council, etc., and judges of the supreme court. The tables of Europeans in this city are supplied with beef, mutton, and many other home luxuries. The chief articles of export are rice, cotton, hides, skins, and especially coffee. The exports from the M. ports are valued at \$20,000,000 to \$25,000,000 a year; imports at more than \$10,000,000. M. has telegraphic communication with England, and therefore America; and cables connecting it with Hong-Kong were laid 1871. M. has railway communication with Bombay, Calcutta, and consequently with the main system of Indian lines. Pop. (1881) 405,848, of whom 3,205 were Europeans, 12,659 Eurasians, 50,298 Mohammedans and the rest chiefly Hindus; (1901) 509,346.

MADRAS' SYSTEM: see **MUTUAL INSTRUCTION.**

MADREPERL, *măd'rě-pěrl* [It. *madreperla*—from *madre*, mother; *perla*, pearl]: mother of pearl.

MADREPORE, n. *măd'rě-pōr* [F. *madrépore*—from *madré*, spotted, and *pore*, a pore: It. *madrepore*: comp. Gr. *pōrōs*, a light friable stone], (*Madrepore*): genus of zoöphytes (*Anthozoa*), type of a family, *Madreporidae*, in which the polyps have 12 short tentacles, and the polypidom is stony. The name, however, is often more extended in signification, and popularly is not clearly distinguished from **CORAL**. The polypidom is sometimes arborescent and branched, sometimes spread out in a leaf-like form. The cells in the true madrepores are isolated and lamellated, spread over the surface of the polypidom like little stars. The variety of forms among the madrepores is very great, and many are very beautiful. They all are found in the seas of warm parts of the world. The *Astræas* are generally in large convex masses, the surface hollowed with crowded stars. They increase with great rapidity, as do some of the other madrepores, and are often found in huge masses, composing some of the most recently formed rocks. **MADREPORITE**, n. *măd'rě-pōr'it*, fossil madreporite; a variety of limestone having a small prismatic or columnar structure which looks like the pore arrangement of coral, but which is only a species of crystallization. **MADREPORIFORM**, a. *măd'rě-pōr'ī-fawrm* [L. *forma*, shape]: perforated with small holes like a coral. *Note.*—Skeat says the origin may be It. *madre*, mother; Gr. *pōrōs*, a light friable stone, hence meaning 'mother-stone'; the connection with *pore* was early substituted for Gr. *pōrōs*.



Madrepore (*Astræa ananas*).

MADRIALE—MADRID.

MADRIALE, n. *măd-rî-ă'lă* [It.]: a word derived from *madrigal*, and as, in the early operas, madrigals were performed between the acts, without necessarily having any connection with them, the word came to be applied to any species of intermezzo.

MADRIER, n. *măd'rî-ér* [F. *madrier*—from L. *mate'riă*, stuff, material]: a thick board or plank used for supporting the earth in mines, and for other military purposes.

MADRID, *mă-drîd'*, Sp. *mă-thrêth'*: capital city of Spain, in the province of M. in New Castile (see CASTILE): near the centre of the country, on the left bank of the Manzanares, a small stream whose waters join those of the Jarama, an affluent of the Tagus. It is built on a hilly, barren, and ill-watered plateau, 2,060 ft. above sea-level, on one hand, without protection against the bitter n. winds from the snowy peaks of the Guadarrama Mountains, and on the other, open to the *Solano*, the s.e. wind, which, aided by a glaring sun, often raises the temperature to 90° and even to 105° in the shade. In winter, the temperature sometimes falls to 18°. Summer, however, is the most trying period. During this season, the sunny and shady sides of the same street may differ 20° in temperature. The climate of M. has been proverbially described as *tres meses de invierno y nueve del infierno* (three months of winter and nine months of hell). The rate of mortality is 1 in 30 to 34. The city is circular in shape, and is surrounded by low walls pierced by 16 gates. It contains 32 churches, 14 barracks, 13 hospitals, 18 public libraries, 4 foundling hospitals, 13 royal academies, numerous elementary schools, a university, 7 leading and numerous minor theatres, an ample supply of newspapers, many literary and artistic institutions, above a dozen nunneries—44 monasteries were suppressed 1836. The number of palaces is great. The principal architectural feature is the Royal Palace (*Palacio Real*), a splendid edifice of granite and of a stone resembling white marble. It is a square 470 ft. in length on each side, 100 ft. in height, inclosing a court 240 ft. square. There are two libraries, the public and the private royal libraries: the former, containing 230,000 vols., is well kept and tended; the latter, with 100,000 vols., is rapidly falling to decay. The royal armory is one of the finest in the world; the Toledo blades, the artistic armor, and shields from Augsburg and Milan, are superb. The armory contains relics of the greatest Spanish epochs, and furnishes in itself a realization of Spanish military history. The *Museo*, said to be one of the finest picture-galleries in the world, contains besides specimens of many other famous painters, 10 of Claude, 22 of Van Dyck, 16 of Guido, 46 of Murillo, 21 of N. Poussin, 10 of Raphael, 62 of Rubens, 52 of Teniers, 43 of Titian, 27 of Tintoretto, 62 of Velasquez, 24 of Paul Veronese, and 10 of Wouvermans. Of all these pictures, the most wonderful are those by Velasquez, whose finest work is here, and who,

MADRIGAL.

indeed, can here only be studied to advantage. The general aspect of M. is that of a new city, with fine houses, streets, and squares. In the squares are numerous statues, as those of Philip IV. and of Cervantes. The manufactures of the city are unimportant. The artisans and tradesmen are supported by the court, the nobility, the officials, and the innumerable body of place-hunters.

The first historical mention of M. occurs under Ramiro II., King of Leon, who took this city 932. In 1083, when M., then called Majerit, was captured by Alfonso VI. of Castile, it was merely a Moorish fortified outpost of Toledo. It rose into some importance in the beginning of the 16th c., when Charles I. (afterward Emperor Charles V.) removed his court hither. In 1560, it was declared the only court by Philip II. A number of memorable treaties have been concluded in M., and bear its name, particularly that between Charles V. and Francis I. of France 1526; that between Spain and Venice 1617; and that between Portugal and Spain 1800. In the Spanish War of Succession, it favored the French party; and in the war of freedom against France, it gave the signal for a general rising by an insurrection against Murat 1808, May 2, in which 1,500 citizens of M. lost their lives. 1809 till 1812, it was held by the French; but in 1812, the Duke of Wellington entered it, and replaced it in the hands of its legitimate rulers. M., always opposed to the Carlists during the recent civil strife of Spain, adopted the cause of King Alfonso 1874. —The pop. has nearly doubled in abt. 25 years: (1877) 397,690; (1900) 539,835. The area of the city was 11½ sq. m.—The province of M. (1900) 3,084 sq. m.; pop. (1887) 682,644; (1900) 775,034.

MADRIGAL, n. *măd'rî-găl* [F. *madrigal*—from It. *madrigale*; Sp. *mandrial*, a kind of irregular lyric poem, properly a pastoral—supposed from L. *mandra*; It. *mandra*, a fold, a stable]: short lyrical poem, adapted to the quaint and terse expression of some pleasant thought, generally on the subject of love. The proper M. consists of three verses or strophes, generally bound together by rhymes; but this form is not always adhered to, and the name is sometimes applied to little love-poems of any form. Among the Italians, the best writers of madrigals are Petrarch and Tasso; among the French, Montreuil, Lainez, and Moncrif; among the Germans, Ziegler (the earliest), Voss, Manso, Goethe, and A. W. Schlegel; and among the English, the poets of the Elizabethan and Caroline ages, several of whom, such as Lodge, Withers, Carew, and Suckling, have written verses, sometimes called madrigals, sometimes songs, the grace and elegance of which have never been matched.—The name M. is applied also to pieces of vocal music of a corresponding character. The musical M., which originally was a simple song in a rich artistic style, but afterward with an instrumental accompaniment (generally the organ), is believed to have originated with the Flemings, and dates from the middle of

the 16th c. It went out of fashion about the beginning of the 18th c., but the later *glee* may be regarded as a similar composition. The English madrigalists are especially famous. Neither Italy nor the Netherlands has produced greater names than the English Morley, Wilbye, Bennett, Ward, Orlando Gibbons, Dowland, and Ford. MADRIGALIST, n., writer of madrigals.

MADURA, *mâ-dô'ra* (Sanskrit, *sweet*): island, separated by a narrow strait from the n.e. of Java, in $6^{\circ}52'$ — $7^{\circ}17'$ s. lat., and $112^{\circ}39'$ — $113^{\circ}9'$ e. long.; about 90 m. long and 24 broad. It consisted of three kingdoms—Madura, w.; Pamakasan, middle; and Sumanap, e.; but is now a Dutch possession, being administered by the native princes under Dutch residents. Chief town, Bangkalang. It is closely connected with Java (q.v.). Pop. (1885) 1,373,498. of whom 500 are Europeans, 4,000 Chinese.

The natives, of Malay stock, are active, honest, brave, and industrious, but quick-tempered and revengeful. They are mostly Mohammedan. They quarry stone, burn lime, make saquerus palm sugar, vegetable oils, mats, and baskets, weave coarse fabrics, make salt, carve wood, fish, and cultivate rice, maize, tobacco, indigo, etc. The rivers are small, and the hills attain no great height; Padjūdan, the highest, being 1,364 ft. above the sea. In some districts, petroleum springs out of the ground, and is burned in lamps. A low chain of limestone hills crosses the island. Exports are sugar, tobacco, indigo, cocoa-nut oil, edible nests, stone, trepang, buffaloes, horses, many cattle, and much salt.

MADURA: maritime district in the s. of British India, presidency of Madras; bounded e. by the strait which separates Hindustan from the island of Ceylon; 9,502 sq. m., and a population (1881) of 2,168,680. Eastward from the shore runs a narrow ridge of sand and rocks, mostly dry, which almost connects Ceylon with the continent. Cotton is the chief commercial crop; and sugar-cane, betel-nut, and tobacco are grown. The principal town is Madura. Missions of the Amer. Board were established in M. 1834, and have gained many converts. Rom. Cath. missions have been successful also.

MADURA: chief town and headquarters of the British Indian dist. of M., on the s. bank of the Vaigai river. Its great temple measures 847 ft. by 744 ft.; in it is the Hall of the Thousand Pillars. The famous palace of Tirumala Nāyak is the finest relic of secular architecture in Madras. A mile and a half e. of the town is the great tank 3,600 ft. square, round which the idols from the pagoda are drawn on a raft at an annual festival, illuminated as reported by 100,000 lamps.—Pop. (1881) 73,807; (1891) 87,420.

MÆANDER, *mē-ān'dēr* (now *Mendēre*): ancient name of a river of Asia Minor, rising near Celænæ, in Phrygia, and flowing s.w. into the Icarian Sea at Miletus. It is noted for its numerous windings—whence the English

word *Meander* (q.v.) signifying to flow in a winding course. The *Scam'ander* (q.v.) also is now called *Mendère*.

MÆCENAS, *mē-sē'nas*, C. CILNIUS: Roman statesman, celebrated for his patronage of letters: b. early in the 1st c. B.C.; d. B.C. 8; of Etruscan origin, and of royal descent (Hor. *Carm.* i. 1), perhaps from Porsena. He received an excellent education, was familiar with Greek and Roman literature, and occasionally did a little in the way of authorship himself. His first appearance in public life dates after the assassination of Julius Cæsar (B.C. 44), when he figures as the friend and adviser of Octavian. He had, it is clear, a talent for private diplomacy, and was employed mainly in that capacity. He 'arranged' a marriage between Octavian and Scribonia, made up (temporarily) the differences between Octavian and Antony, and brought about the peace of Brundisium. B.C. 36, he was in Sicily, helping Octavian, as usual. Five years later, when the latter was fighting the great and decisive sea-battle of Actium with his rival Antony and the Egyptian princess Cleopatra, M. proved himself a vigilant gov. of Rome, by crushing a conspiracy of the younger Lepidus, and thereby preventing a second civil war. When Octavian became emperor under the title Augustus (a step which he is said to have taken by the advice of M., who was profoundly impressed with the necessity of a 'strong government' to repress the anarchic elements of the period), M. was appointed administrator of all Italy. The nature and extent of his official power are not precisely understood, but they were undoubtedly great, though the influence and authority of M. are to be estimated rather from his intimacy with the emperor than his mere position as a public servant. This intimacy continued many years; but sometime before B.C. 16, it was ruptured from causes not now known. No enmity, however, ensued. M. was a thoroughly sincere imperialist. He had a belief in the value of an established government; and when he found that he no longer retained the confidence of his sovereign, he did not lapse into a conspirator; but, as a modern minister might do, retired into the obscurity of private life. Literature and the society of literary men thereafter occupied his time. He was immensely rich, and kept an open table for men of talent at his fine house on the Esquiline Hill. M.'s intercourse with Horace especially was most cordial, and equally honorable to both. So far as personal morality went, M. was a thorough pagan—not a bad man as the word was then understood, but copiously addicted to sensual delights. His adulteries—if not worse—were the talk of the city; he dressed effeminately, had a passion for theatrical entertainments, paid great attention to cookery, gardening, etc.; and in short, in his theory of life, was an Epicurean of 'the baser sort.' It does not, therefore, surprise us to find that he was a valetudinarian and a hypochondriac, and that he died childless. He left the bulk of his property to Augustus,

MAELAR, *mā'ler* (or MÄLAREN, *mā'ler-én*), LAKE: one of the largest and most beautiful lakes in Sweden, and one of the most beautiful in the world; 78 m. in length, in average breadth about 13; consisting of numerous small lakes communicating by short channels, and inclosing islands to the number of 1,200. In but few places is there a clear sheet of water more than a mile square. It has many n. and s. inlets, one of which extends 25 m. northward. It is navigable in all parts by boats; and steamers ply to and from Stockholm. Its e. end is close by Stockholm, where its waters are poured into the Baltic Sea through a canal 2 m. long, the difference of level being scarcely six ft. The banks are varied with wood, lawn, and cliffs, and adorned with many castles, country-seats, and villas. They are very fertile and well cultivated, and upon them are, besides Stockholm, the towns of Enköping, Westeras, Köping, Arboga, Strengnäs, Thorshälla, Mariefried, and Sigtuna.

MAELSTROM, n. *māl'ström* [Norw. a whirling stream]: the name of a celebrated whirlpool on the coast of Norway; a violent storm of temper. See MALSTRÖM.

MÆNAD, n. *mē'nād* [Gr.—from *mainomai*, to be mad]: a woman who took part in the orgies of Bacchus; hence, a raving, frenzied woman.

MAESHOWE, *mās-how'*: artificial mound with an interior chamber, of unknown antiquity; on the mainland of Orkney, about nine m. w. from Kirkwall, and little more than a mile from the famed Standing Stones of Stennis. M. is described by Dr. William Chambers in a work (*My Holidays*) privately circulated 1867, from which some particulars are here drawn. Outwardly, it presents only a circular grassy tumulus, or barrow, 36 ft. high, and about 92 ft. in diameter at the base, at which is a low door. Within is a low passage varying from a width of 2 ft. 4 inches at the entrance, to 3 ft. 4 inches at the opening into the interior chamber, and with a height not exceeding 4 ft. 8 inches. The passage is formed by slabs of stone, above, below, and along the sides. The central chamber, a vault of slabs of stone, is about 15 ft. square, and 13 ft. high. On each of the sides except that with the entrance, 3 ft. above the floor, there is a square opening to a cell, the largest of which is 7 ft. long by 4 ft. 6 inches wide. The roof of the vault, somewhat changed by recent repairs, had originally been constructed with slabs advancing successively layer above layer to the centre. There are Runic inscriptions and emblematic or fanciful figures carved on a few of the stones. The carvings, as explained partly through the assistance of Norwegian scholars, refer to Vikings and other Scandinavian heroes, or to transactions in the middle ages. One of these inscriptions, according to one interpreter, signifies: 'Molf Kolbainson carved these Runes to Ghaut'—Ghaut being possibly a comrade who fell in battle. Another interpretation is: 'Tholfe Kobainsson cut these Runes (on) this cave.' Scarcely two

persons agree in the signification of any of the inscriptions; this may have been due to imperfect transcriptions sent to foreign scholars. Damp is likely soon to

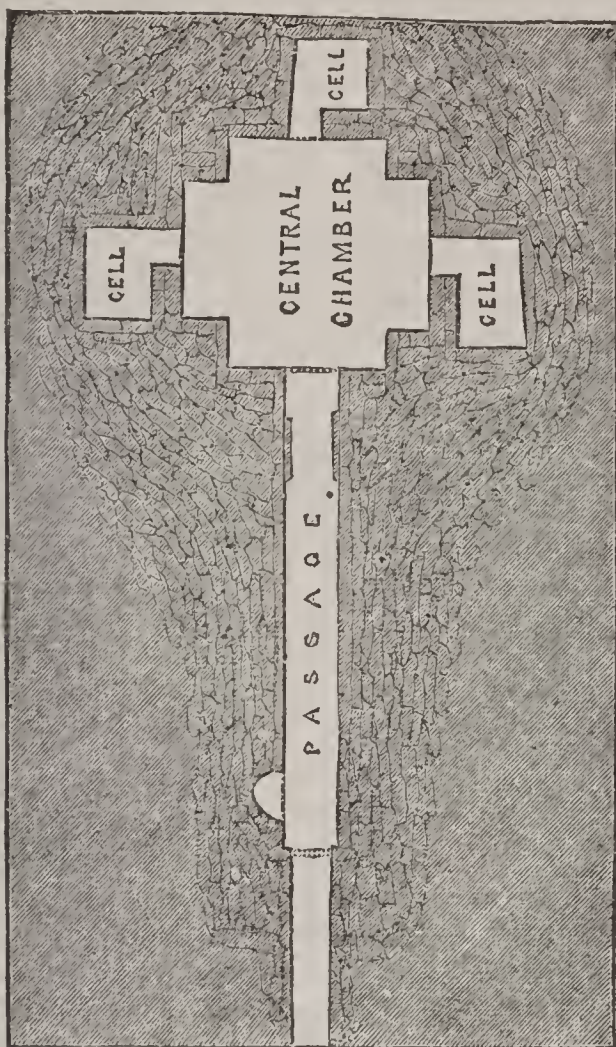


Fig. 1.—Maeshowe: Ground-plan.

deface these interesting inscriptions. Several purport to refer to hidden treasure, which as an advertisement of a secret, has its absurd side. Of the emblematic or fanciful figures, nothing can be made: these may be mere whimsicalities. Nothing in the Runes explains the origin or use of the structure. We are left to conjecture that it was erected as a sepulchre in extremely remote times; and being opened by Scandinavian rovers, in the hope of discovering hidden treasure, they used it as a resort or hiding-place, and carved the inscriptions which remain.

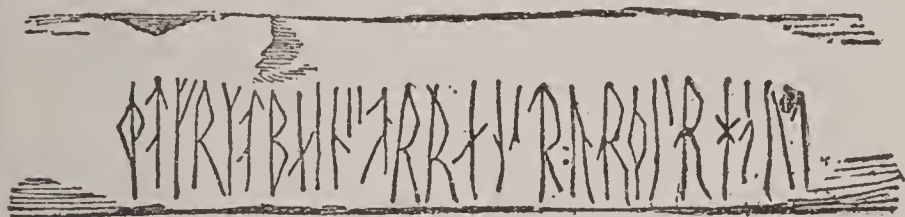


Fig. 2.—Runes, interior of Maeshowe.

Obviously, the building and the passage communicating with it were erected on the open plain, and then covered with the earth which forms the tumulus. There is at some distance an environing mound and ditch, still nearly entire. The whole structure bears a resemblance to the

vaulted tumuli in other parts of the British Islands: this points to a common origin. Capt. Burton's *Ultima Thule* (1875) asserts a resemblance or connection between the runes of M. and a Syrian cipher called El Mushajjar.—Stuart in the *Transactions* of the Scottish Soc. of Antiquaries, 1867.

MAESTOSO, n. *mâ'ēs-tō'zō*, or MAESTOSA [It.]: a direction in music, to give grandeur and strength to a passage: it is frequently followed by *con gravita*.

MAEST'TRICHT: see MAASTRICHT.

MAESTRICHT BEDS, *mâs'trikt*: geological strata of soft yellowish limestone, at Maastricht in Holland. They have a thickness of 100 ft., abounding in remains of Corals and Bryozoa, sometimes, indeed, entirely composed of them. The fossils are peculiar, and quite distinct from Tertiary species. Yet a considerable interval must have elapsed between the deposition of the M. and B. and the underlying chalk, for that had been abraded before the deposition of the newer beds. The most remarkable fossil in these strata is the gigantic marine reptile Mososaurus (q.v.).

MAESTRO, n. *mâ-ēs'trō* [It.]: a master in any art; especially a master in music; a composer.

MAFFEI, *mâf-fā'ē*, FRANCESCO SCIPIONE, Marchese di: 1675, June 1—1755, Feb. 11; b. Verona: Italian author. He studied in the Jesuit College at Parma, and in his youth was in military service under his brother ALESSANDRO DI M. who greatly distinguished himself in the Spanish War of Succession and who finally rose to the rank of field-marshal. Afterward M. turned to literary pursuits, and was one of the editors of a critical journal, intended to promote among the Italians an acquaintance with foreign literature. His tragedy *Merope* (Modena 1713) was received with great approbation, and went through 70 editions in M.'s life. His successful comedy *La Ceremonia* soon followed. M. was a zealous promoter of the study of the Greek language and literature in Italy, and bestowed much labor on the examination of ancient manuscripts. His *Verona Illustrata* (Ver. 1731-2; new ed., 8 vols., Ver. 1792-3) is a work of much learning and value. He died at Verona. A collective ed. of his works (21 vols.) was published Venice 1790.

MAFFLE, v. *măfl* [Dut. *maffelen*, to stammer: Bav. *muffeln*, to mumble, to chew]: in *old* and *prov. Eng.*, to speak imperfectly, as a young child; to stammer. MAFFLING, imp. *măfl'ing*. MAFFLED, pp. *măfld*.

MAFRA, *mâ'frâ*: small town of Portugal, province of Estremadura, 18 m. n.w. of Lisbon. Pop. 3,500. It is remarkable only for its palace and convent, which form an enormously large and most striking edifice, 780 ft. in length, 690 ft. in width, containing 866 rooms, with 5,200 windows, and about as many doors; 10,000 troops, it has been said, could be reviewed on its roof. It was built by King John V. (1717-81), and is splendidly fitted

up and decorated. The library contains 30,000 vols., and is 300 ft. in length; its pavement consists of white and red marble; and the bookcases are of the most costly woods.

MAGADOXO, *măg-a-dōks'ō*, Pg. *mâ-gâ-dō'shō*, or MUK-DISHA, *mūk-dē'shâ*: commercial town on the e. coast of Africa, on the Somali coast, lat. 2° 2' n. It was built by the Arabs 924, for purposes of trade, and was flourishing when the Portuguese first visited it. It now belongs to the Imaum of Muscat, whose flag floats above the town. It exports dhurra, beans, peas, cattle, cotton, spices, etc. Pop., inclusive of slaves, abt. 5,000.

MAGALHÃ'ES, FERNÃO DE: see MAGELLAN, FERDINAND.

MAGAZINE, n. *măg'ă-zēn* [F. *magasin*; Sp. *magacen*; Port. *armazen*, a magazine, a storehouse—from Ar. *makhzen*, a storehouse: Alb. *magazoid*, I bring together]: building in which to store provisions, arms, or ammunition; a strong building in which to store gunpowder safely; in a *ship of war*, a closely guarded room in the hold: see below. In *literature*, a pamphlet published at regular intervals, containing compositions of a miscellaneous character: the earliest periodical of this class was the *Gentleman's Magazine*, begun by Edward Cave 1731. Such periodicals are now numerous in Britain and America, presenting productions of high order, often profusely illustrated, and with enormous circulation. MAGAZINE-DAY, the day on which monthlies and serials are published and supplied to the trade.

MAGAZINE', in Military Affairs: a place for storage of gunpowder, though arms also may at times be kept in it. A M. may be a *dépôt* where vast quantities of gunpowder are held in reserve, an *entrepôt* for the supply of several advanced works, a battery M. for the wants of a fortress during a siege, or merely an expense M. for the daily requirements of its special battery. The last is usually temporary, and hollowed out in the back of the rampart; but the other forms require most careful structure. They must be bomb-proof, which necessitates very thick walls; they must be quite free from damp; and they should admit sufficient daylight to render the use of lanterns within generally unnecessary. Magazines are commonly built of brick, the solid masonry being arched over within, and a thickness of earth usually added above the brickwork, to insure impermeability to shells. The entrance is protected by shot-proof traverses, lest an opening should be forced by ricochet shots. Within, a M. is divided into bins or compartments, and one of these should always be kept empty, in order that the barrels of powder may frequently be moved from one place to another, a process necessary to keep it in good condition. A battery M. commonly contains 500 rounds for the guns dependent on it. *Dépôt* magazines should, when possible, be limited to 1,000 barrels of powder.

In a ship, the M. is strongly built in the hold; it is

MAGAZINE GUNS—MAGDALEN COLLEGE.

divided by a transparent screen from the *light-room*, in which are kept properly provided lanterns, the introduction of fire in any form into the M. itself being absolutely forbidden. As the explosion of the M. is equivalent to the destruction of the ship, means are devised by which, on the least appearance of fire in its vicinity, the M. may be immediately flooded.

MAGAZINE' GUNS: see BREECH-LOADING GUNS.

MAGDALA, *măg-dâ'la*: rock-fort and small town of Abyssinia, about 120 m. s.e. of Gondar, on a plateau about 9,000 ft. above sea-level, and 1,000 ft. above the plain around. M. acquired note as the place of residence of the Negus or king of Abyssinia (see THEODORE), and as the place of captivity of the British prisoners, for whose rescue an expedition was at last sent out, 1867, by the British government. Its rock-fortress was forced 1868, Apr. 13; the town was burned and its defenses destroyed. M. was found to be a dirty and insignificant town; pop. 3,000 or 4,000.

MAG'DALA (*Magadan*): town probably on the w. shore of the Lake of Galilee—*Migdal-el* of Josh. xix. 38; birthplace of Mary Magdalene, i.e., Mary of Magdala. After Jerusalem was destroyed M. became a seat of Jewish learning. The village *el-Mejdel* now occupies its supposed site.

MAGDALA-RED, n. *măg'da-la-*: naphthaline-red. A beautiful red dye discovered in 1867 by Von Schiendl, at Vienna.

MAGDALEN, n. *măg'dă-lên*: a reformed prostitute—so called—pursuant to an utter misconception—after Mary *Magdalene* (q.v.) of Scripture.

MAGDALENA, *măg-dâ-lă'nâ*: principal river of the United States of Colombia, S. America, flowing from a mountain lake at the s. extremity of the Eastern Cordilleras. After a n. course of 900 m., it falls into the Caribbean Sea, lat. 11° n., long. 75° w. Its upper course is rapid and interrupted by many cataracts; the lower is through a great plain. It is navigable to Honda, 540 m. from its mouth: its chief affluent is the Cauca. The area drained by the M. is estimated at 110,000 sq. miles.

MAGDALENA, *măg-dâ-lă'nâ*: extreme n. state in the United States of Colombia; bounded n. by the Caribbean Sea, e. by Venezuela, s. by the state of Santander, w. by the state of Bolivar; 26,950 sq. m.; cap. Santa Marta. It has two mountain ranges, a branch of the E. Cordilleras on the e., the Sierra Nevada de Santa Marta in the centre; is watered chiefly by the Rio Magdalena; has a fertile soil, producing rice, cotton, coffee, sugar, tobacco, cacao, and a large variety of tropical fruits. It has numerous sea-ports. The climate is intensely hot, and yellow fever prevails along the coast nearly the whole year.—Pop. (1871) 85,255; (1881) 90,000; (1890) abt. 125,000.

MAG'DALEN COLLEGE, Oxford; in full, The College of St. Mary Magdalene; one of the colleges of Ox-

MAGDALENE—MAGDALENE COLLEGE.

ford Univ., England. William Patten, commonly called Waynflete from the place of his birth, successively head master of Winchester, head master and provost of Eton College, bp. of Winchester, and at the same time lord high chancellor, founded the Hall of St. Mary Magdalene 1448. In 1457, he obtained a license from the king to found a college into which he transferred the pres. and scholars of the Hall. M. is in many respects the most remarkable college in Oxford, and Wood declared it 'the most noble and rich structure in the learned world, that is to say, that if you have regard to its endowment, it excelleth, all things considered, any society in Europe.' There were on the original foundation a pres., 40 fellows, 30 scholars called demies, 4 chaplains, and 16 choristers. The fellowships and demysships were confined to certain specified dioceses and counties. By ordinances passed under the powers of 17 and 18 Vict. c. 81, the constitution has been considerably changed. Certain statutable restrictions on fellowships and demysships are abolished. The demysships are of the value of £95 per annum, and 10 are to be added to the statutable number: 20 exhibitions of the same value were at the same time founded. Four professorships—of moral philosophy, chemistry, mineralogy, and physical geography—of the value of £600 per annum, are to take the place of three lecture-ships—of divinity, moral philosophy, and natural philosophy, which were founded by Waynflete. To carry out these changes, ten of the fellowships are suspended. By the same ordinance, it is directed that the fellowships are not to exceed £300 per annum, exclusive of rooms. This college is one of great beauty, and is rich in historical associations. It has 41 benefices in its gift.

MAGDALENE, *măg-dā-lē'nē* or *măg'dā-lēn*, MARY; or MARY OF MAG'DALA (named from the town Magdala; q.v.): a woman 'out of whom Jesus cast seven devils,' and who believed in him and followed him. She was one of the women who stood by his cross, and one of those who went with sweet spices to his sepulchre. To her first he appeared after his resurrection. In consequence of an utterly unfounded notion identifying her with the penitent woman (Luke vii. 36-50) who anointed the Lord's feet with ointment, and wiped them with the hairs of her head, Mary M. has been long and generally regarded as a woman whose early life had been profligate, though of this there is no hint whatever in the narratives of the evangelists. The Magdalenes, frequent among works of art, represent her according to this prevalent misconception.—The very name Magdalene has come to be applied to women who have fallen from chastity, and institutions for the reception of repentant prostitutes are known as *Magdalen Asylums*: see PENITENTIARIES.—There is no evidence identifying Mary Magdalene with Mary of Bethany, sister of Lazarus.

MAGDALENE COLLEGE, Cambridge: one of the colleges in Cambridge Univ., England; founded 1519 by Thomas, Baron Audley of Walden, who left for this pur-

MAGDALEN HALL—MAGDENBURG.

pose the impropriate parsonage of St. Catherine Cree Church, London, also a considerable part of the city, anciently called Covent Garden, Christ Church. It has eight open fellowships on the foundation; four are named after persons who have made benefactions to the college—Spendluffe, Wray, Drury, and Millington. M. C. has 12 scholarships—3 of £60, 3 of £40, and 6 of £20 each—all of which are likewise named after their founders; besides 13 exhibitions, 5 of which are for scholars from Shrewsbury School, 4 for scholars from Wisbeach School, and 4 for scholars from Leeds, Halifax, and Heversham Schools. There is also an annual benefaction, called the Pepysian, worth £50, in the gift of the master, and generally bestowed by him on poor and deserving students. M. C., 1879, counted 62 undergraduates, 129 members of the senate, and 228 members on the boards.

MAGDALEN HALL, Oxford: educational institute founded at the same time as Magdalen College. Till 1602, it was a sort of school for students previous to admission to the college, and was governed by one of the college fellows. It then became an independent Hall, and 1822 was removed to the seat of the former Hertford College, which was refounded by T. C. Baring 1874, at which time M. H. became merged in the new foundation.

MAGDALEN ISLANDS: small group near the centre of the Gulf of St. Lawrence, 54 m. n.w. of Cape Breton Island, and about the same distance from Prince Edward's Island. They consist chiefly of Coffin, Amherst, and Grindstone Islands, whose inhabitants are supported by the productive cod, herring, and seal fisheries of neighboring waters. Pop. abt. 2,000.

MAGDEBURG, *mäg'déh-bérg*, Ger. *mäch'déh-bûrch*: chief town of Prussian Saxony, 52° 8' n. lat., and 11° 40' e. long.; one of the most strongly fortified and most important commercial towns of Prussia, and the focus of four principal lines of railway in Germany. Pop. (1900) 229,667 (including its suburbs and its citadel). It is on the left bank of the Elbe, surrounded by extensive suburbs, known as Neustadt and Sudenburg; but with the exception of one long and wide thoroughfare, the *Breite Weg* (Broadway), its streets mostly are narrow and crooked. M. is the seat of the governmental courts of appeal and administration, and of a supt.gen. of the Evangelical Lutheran Church. It has two gymnasia, a normal school, institutions for the deaf and dumb and blind; schools of arts, trades, practical mining, medicine, surgery, and midwifery; and is well provided with institutions of charity. Its most remarkable buildings are the cathedral, built 1208–1363, containing the graves of Emperor Otho, founder of the city, and of his first wife, the English princess Editha; also the sarcophagus of Abp. Ernest, sculptured 1497 by P. Vischer of Nürnberg; the town-hall, in front of which stands the memorial of Otho the Great, erected after his death 973, by the magistracy of M., in grateful remembrance of his

MAGDEBURG HEMISPHERES.

favours to the city; the govt. house, the barracks, and the theatre. The industrial products of M. comprise silk, cotton, and woollen goods, gloves, ribbons, and leather, and it has manufactories of tobacco, chicory, lead, sugar, and vinegar, and extensive breweries and distilleries. The transit and commission trade is considerable; there are annual wool and other markets; and trade is facilitated by rail, and by steam and canal navigation. In 967, M. was raised by Pope John XIII. to the dignity of the see of the primate of Germany, having already acquired the rights of a free city under Charlemagne. During the middle ages, the archbishops and the magistracy were frequently at war; and M. early adopted the Reformed doctrines, and thus brought upon itself the combined wrath of the emperor and the archbishops. During the Thirty Years' War, M. suffered fearfully. In 1629, it was besieged by the imperialists for 28 weeks in vain; in 1632, after a fierce resistance, the city was taken by Tilly, sacked, and nearly burned to the ground; the cathedral and about 150 houses being all that remained after the three days' ravage: 30,000 of the inhabitants were slain, and numbers threw themselves into the Elbe, to escape the fury of the invaders. In 1648, the archbishopric was converted into a secular duchy, and conferred on the House of Brandenburg, in compensation for the loss of Pomerania. In 1806, M. was taken by the French, and annexed by them to the kingdom of Westphalia; but finally restored to Prussia, in consequence of the downfall of Napoleon 1814.

MAGDEBURG CENTURIES: name given to the first comprehensive work of Prot. divines on the history of the Christian Church. It was so called because divided into centuries, each of which occupied a volume, and because it began to be executed at Magdeburg (q.v.). The originator of the work was Matthias Flacius (1552), and his purpose was to demonstrate the identity of the Prot. doctrines with those held by the primitive church, and the departures of the Rom. Cath. Church from the same. Joh. Wigand, Matt. Judex, Basilius Faber, Andr. Corvinus, and Thom. Holzbuter were Flacius's principal fellow-laborers; and several Prot. princes and noblemen defrayed the heavy expense of the work. The writers, called *Centuriators*, brought their work only to the year 1300. It was published at Basel (13 vols., 1559-74); Baumgarten and Semler began a new ed. (6 vols. Nürnberg, 1757-65). The M. C. evinees great learning, accuracy, and sound judgment. The Rom. Cath. historian Baronius (q.v.) wrote *Annales Ecclesiastici* as a reply to it.

MAGDEBURG HEMISPHERES, n. plu. *mäg'déh-bérg hēm'î-sfērz*: apparatus for illustrating atmospheric pressure, consisting of two hollow hemispheres, generally of copper or brass, with edges accurately fitted to each other and one of them furnished with a stop-cock. When the edges are rubbed over with grease, pressed tightly together, and the globe thus formed exhausted

MAGE—MAGELLAN.

of air through the cock, the hemispheres, which fell asunder before exhaustion, are now pressed together with immense force; e.g., if they are 12 inches in diameter, they will, after exhaustion, be pressed together with a force of nearly a ton. This experiment was performed first by Otto von Guericke (q.v.) 1650, at the imperial diet at Ratisbon, to the astonishment of Emperor Ferdinand III. and his princes and nobles.

MAGE, n. *māj*: in *OE.*, contraction for *magician*.

MAGELLAN, *ma-jěl'an*, Sp. *mâ-chěl-yân'*, FERDINAND; (properly FERNÃO DE MAGALHÃES): famous voyager: abt. 1470–1521, Apr. 27; b. Oporto (or perhaps Villa de Sabroza); of good family. He served with distinction under Albuquerque in the E. Indies; but thinking his services ill rewarded by the Portuguese court, he went, 1517, to Spain with his countryman, Ruy Falero, geographer and astronomer. They laid before Charles V. a scheme for reaching the Moluccas by the west, which was well received by him; and M. sailed 1519, Aug. 10, with five ships and 236 men, from San Lucar, and proceeding to the mouth of the La Plata, and along the shores of Patagonia, he discovered and sailed through the strait which bears his name (1520, Nov. 28); discovered the s. Pacific Ocean, to which he gave that name on account of the fine weather which he experienced there; reached the Philippine Isles, and fell in a fight with the chief of the isle of Matan. His ship was safely navigated home to Spain, and thus completed, 1522, Sep. 6, the first voyage ever made round the world. Patagonia, and the supposed continent of which the island Tierra del Fuego was long deemed a portion, were long known as Magellan's Land. The complete narrative of M.'s voyage was edited by Amoretti. See also *The First Voyage round the World, by Magellan*, by Lord Stanley (1875).—A member of the same family, Fray GABRIEL DE (1609–77), was an active Jesuit missionary in China, whose *Nouvelle Relation de la Chine* has been esteemed by scholars.

MAGEL'LAN (or MAGALHÃ'ES or MAGALHA'ENS), STRAIT OF: water-passage separating S. America from Tierra del Fuego, on the south. It is 300 m. in length; its breadth varies through the most of its course from 1 m. to 15 m. It was discovered 1520 by Magellan, and took its name from him. Its frequent fogs and wind-storms, and many rocks make it perilous for sail-vessels, and it was long avoided by navigators generally. Within recent years, the introduction of steamships has caused it to be preferred as equally safe with the passage round Cape Horn, and much shorter, especially as careful observations have now made known the preferable channels among the numerous islands at its w. extremity and in some other parts. The shores of the middle portion are precipitous, and toward the w. end grandly picturesque with lofty snow-covered peaks and great glaciers. (See description by Mrs. Agassiz, *Atlantic Monthly*, 1873, Jan.). The claim to the region contiguous is disputed

MAGELLANIC CLOUDS—MAGERÖE.

between Chili and Paraguay.—See also Charles Darwin's *Voyage round the World*, reprint, N. York 1873; *Adventures in Patagonia*, by the Rev. Titus Coan, 1880.

MAGELLANIC CLOUDS, n. plu. *măj'el-ăn'ik klowdz*: the two whitish nebulae or cloud-like substances near the south pole of the heavens—so called from *Magellan* the navigator. **MAGELLANIC-PROVINCE**, n., in *zool. and geog.*, a marine province including the coasts of Tierra del Fuego and the Falkland Islands, those of S. America from Point Melo on the e. to Concepcion on the west.

MAGENDIE, *mâ-zhông-dē'*, FRANÇOIS: French physiologist and physician: 1783–1865; b. Bordeaux. He became a pupil of Boyer, celebrated anatomist. He was appointed physician to the Hôtel-Dieu; was elected a member of the Acad. of Sciences 1819, and succeeded Recamier in the chair of anatomy in the College of France 1831. M.'s chief physiological works are: *Précis Élémentaire de Physiologie* (1816), which went through several editions, and was enlarged into the *Elémens de Physiologie*, which was translated into English, and was for many years the best work on physiology in this language; *Leçons sur les Phénomènes Physiques de la Vie* (1836–42); *Leçons sur le Sang* (1839); *Leçons sur les Fonctions et les Maladies du Système Nerveux* (2 vols. 1839); and *Recherches Philosophiques et Cliniques sur le Liquide Cephalo-rachidien ou Cerebro-spinal* (1842). He was founder, and for ten years editor of the *Journal de la Physiologie Expérimentale*, in which are recorded many of the experiments on living animals which gained for him, too deservedly, the character of an unscrupulous vivisector.

He was the first to prove experimentally that the veins are organs of absorption; he pointed out that non-nitrogenous foods are non-nutritious, and that an animal cannot live solely on any one kind of food; he performed an important series of experiments on the cause of death when air is admitted into the larger veins; and he shares, with Sir Charles Bell, the discovery of the separate functions of the two roots of the spinal nerves.

MAGENTA, n. *mă-jěn'tă* [after *Magenta*, in Milan, where a battle was fought in 1859, at the time of its discovery]: a rose-colored dye, one of the earliest obtained from the aniline dyes.

MAGENTA, *mâ-jěn'tâ*: Italian town, province of Milan, on the high-road and railway from Novara to the city Milan, distant 12 m. Its district yields excellent wine and abundance of mulberries. In the campaign of 1859, M. was the scene of a decisive victory won by the French and Sardinians over the Austrians. It has given its name to one of the colors derived from coal-tar: see **DYE-STUFFS**. Pop. 5,100.

MAGERÖE, *mă'ghér-ô-eh*: island in the Arctic Ocean; most northerly of the larger European islands. It belongs to Norway, lies close to the coast of Finmark, and terminates on the n. in North Cape, 970 ft. in height, lat.

MAGG—MAGGOT.

71° 10' n., long. 25° 50' e. M. is 22 m. long, 15 m. broad; irregular in shape, and deeply indented by bays. It supports a few Norwegian and Lappish families.

MAGG, v. *mäg* [Gael. *mäg*, a soft, plump hand, a paw: OE. *mages*, the hands]: in *Scot.* and *slang*, to steal; to pilfer. MAGG'ING, imp. MAGGED, pp. *mägd*. MAGG, n. or MAIK, n. *māk*, a halfpenny. MAGGS, n. plu. *mägz*, the gratuity expected by carters, porters, and the like, from those to whom they carry or drive goods.

MAGGIORE, a. *mäd-jō'rā* [It.]: in *music*, greater.

MAGGIORE, LAGO, *lâ'gō mäd-jō'rā*, or LAKE OF LUCAR'NO: one of the largest lakes in Italy, *Lacus Verbanus* of the Romans; situated for the most part in Italy, but also partly in the Swiss canton of Ticino. Of its 82 sq. m. 65 belong to Italy, 17 to Switzerland. It is 38 m. long, greatest breadth about 7 m., general breadth 2 to 4 m. It is 650 ft. above the level of the sea, and in some places is 2,500 ft. deep. The river Ticino flows through it. In a s.w. expansion of the lake, are the Borromean Isles (q. v.). On the n. and w. it is surrounded by granitic mountains; on the s. and e. by vineyard-covered hills. The lake is liable to floods. 23 species of fish have been enumerated in it.

MAGGOT, n. *mäg'göt* [W. *magu*, to breed; *magad*, a brood, a multitude: comp. Gael. *magair*, to crawl]: a worm or grub, particularly of the flesh-fly; a whim or fancy. MAG'GOTY, a. *-göt-ī*, full of maggots; whimsical; capricious.—*Maggot* is the popular name of the larvæ of many kinds of dipterous insects, particularly of the great family *Muscidæ* (Flies), though it is often given to those also of *Æstridæ* (Bot-flies, etc.). It denotes more commonly those larvæ which feed on animal, than those which feed on vegetable substances; and it denotes particularly those—of which there are very many species—which feed on putrescent animal matter. *Corpse-worms* are the larvæ of *Sarcophaga mortuorum*, a fly always ready—at least in Europe—to lay its eggs in human bodies deposited in open vaults. Maggots of the Flesh-fly (q. v.) are used to feed pheasants and as fish-bait, and, to procure them in abundance, dead bodies of animals are often exposed to putrefaction in the open air.

MAGI, n. plu. *māji*, or MAGIANS, n. plu. *mā'ji-ānz* [L. *magi*, magians; F. *mage*, a magian—from L. *magus*; Gr. *magos*, a magian: comp. Gael. *maithé*, chiefs, good men—from *math*, good, fitting]: religious caste among the Persians who worshipped light or fire as the emblem of the invisible God, who cultivated a knowledge of astronomy and the secrets of nature, and to whom were attributed mysterious powers, and the practice of divination: later the term was applied specially to the followers of Zoroaster, who held two principles, one of good, the other of evil. MA'GIANISM, n. *-ān-izm*, the philosophy or doctrines of the magi. The origin of the term *Magi* has recently been brought to light by Assyrian scholars. In Accadian, the language of the early Scythian or Turanian inhabitants of Babylonia and Media, *imga* signifies 'august,' 'reverend,' and was the title of their learned and priestly caste. These Accadians had made great advances in astronomy, or rather astrology, and were much addicted to divination and similar mysterious arts. The Semitic nations, afterward dominant in Babylonia and Assyria, adopted not only the learning and many of the religious observances of the early inhabitants, but also a number of the special forms, and among others the name for the learned caste, modifying it to suit their own articulation; and out of the Semitic form the Greeks made *magos*. Under the Persian empire the magi rose to the very highest importance. They were not only the 'keepers of the sacred things, the learned of the people, the philosophers and servants of God,' but also diviners and mantics, augurs and astrologers. They called up the dead, either by awful formulas which were in their exclusive possession, or by means of cups, water, etc. They were held in such reverence that no transaction of importance took place without or against their advice. The education of the young princes was in their hands; also they were the constant companions of the ruling monarch. With such 'wise men,' gathered probably from various nations by Nebuchadnezzar, and intrusted by him with important functions (Jer. xxxix. 3, 13; Dan. i. 4, 20; ii. 24; v. 11; vi. 3, 16, 26; etc.), was the prophet Daniel associated. For their religious system itself, see GUEBRES: PARSEES. Zoroaster (q.v.) (*Zerdusht*) reorganized, in the course of his great religious reform, also the body of the magi, chiefly by reinforcing the ancient laws about their mode of life, which had been prescribed to be one of the simplest and severest, befitting their sacred station, but which had become one of luxury and indolence; and by re-instituting the original distinction of the three classes of *Herbeds* (disciples), *Mobeds* (masters), and *Destur Mobeds* (complete masters). The food, especially of the lower class, was to consist only of flour and vegetables; they wore white garments, slept on the ground, and were altogether subjected to the most rigorous discipline. The initiation consisted of awful and mysterious ceremonies. Purifications of several months'

duration preceded it, and it was long before the stage of the disciple's 'being led into the realms of the dead' was proceeded with. Gradually, however, their influence, once powerful enough to raise them to the throne itself (Sassanides), began to wane; and whereas formerly a number of 80,000 delegates of magi had to decide on the affairs of state and religion, this council, in later times, dwindled to seven; and from being the highest caste, the priests of God, and the 'pure of mind, heart, and hand,' they fell to the rank of wandering jugglers, fortune-tellers, and quacks, and gave the name Magic (q.v.) to the art of sleight-of-hand, and performance of conjuring tricks.

The Eastern Magi of the older and purer class possess an interest which has been felt through all the Christian Church, from their recorded appearance at the cradle of the infant Christ, Matt. ii. 1,2,7-12. The narrative, to the last degree simple, has been made the nucleus for an enormous mass of ecclesiastical legend, entertaining but quite worthless. All that we know of them, is that 'from the East'—general term for a vast region remotely e. and n.e. of Palestine—came 'wise men,' doubtless students and observers of the heavens since some celestial phenomenon, 'his star' had decided their coming. They arrived at Jerusalem, were summoned into conference with King Herod, proceeded to Bethlehem, presented their gifts appropriate to one of royal birth, gave homage, and departed 'by another way' to their distant home—perhaps Persia. No reason whatever exists for supposing them to be kings, or to have been three in number. The legendary concretion around this beautiful simple story is amazing. We are told of 'three kings, Gaspar, Melchior, and Balthazar'; of their journey with a vast retinue, of which they left 7,000 men beyond the Euphrates, bringing 1,000 to Jerusalem. We are told of their bodies discovered in the east and brought to Constantinople, thence transferred to the cathedral of Milan, and thence in the 12th c. to Cologne, in whose majestic cathedral the three bodies have now for six centuries been shown to visitors.

More beautiful than all legendary splendor and artistic adornment that have gathered round the visit of the Magi, is the simple fact that the highest and purest culture of the old heathen world was drawn from far lands to behold and to give honor to the Babe that was born at Bethlehem the King of men and the Heir of all the ages.—See EPIPHANY.

MAGIC, n. *măj'ik* [L. *magicus*; Gr. *magikos*, belonging to magic—from L. *magus*, a magian: Gr. *mageia*, enchantment, the rites of the ancient Persian Magi (see MAGI)]: pretended art or science of working by the aid or power of spirits; sorcery; enchantment; the secret operation of natural causes, as natural magic: see below. MAGIC, a. *măj'ik*, or MAGICAL, a. *măj'i-kăl*, pertaining to magic; used in magic; performed by spirits or the invisible powers of nature. MAG'ICALLY, ad. -*ly*. MAGICIAN, n. *mă-jish'an*, one professedly skilled in magic or the black art. MAGIC-LANTERN: see below. MAGIC-SQUARE: see below. MAGIC WAND, rod of a magician.—SYN. of 'magic, n.': necromancy; witchcraft; conjuration.

MAG'IC [see MAGI]: general name for wonderful effects produced in some mysterious way. Medicine in its early form was intimately allied to magic. It would soon be discovered by accident that certain plants produced powerful effects, both good and bad, on the bodies of men and animals; and the reverence arising from their real virtues would lead to ascribing to them all manner of imaginary ones. The laws of nature being little known, one thing was not more incredible than another; and effects were assigned to causes in the most arbitrary and accidental way. The Rosicrucian physicians treated a case of wounding by applying the salve to the weapon instead of to the wound itself; and this may be taken as the type of magical, as contrasted with rational medicine. In modern times, drugs are drawn mostly from the mineral and vegetable kingdoms; but while the healing art was in the mystic stage, animal substances were most esteemed. If the juice of a plant could affect the living body, how much more must the life-blood of another animal! And the rarer the kind of blood, so much the rarer the virtue. The blood of an innocent child, or of a virgin, was believed to cure the leprosy; that of a criminal put to death by law, the falling sickness. The hearts of animals, as being the seat of life, were held to be potent drugs. The fat of a hog had been found by experience to benefit a sore; what virtue, then, must there be in human fat, with the solemn mysteries of the grave about it!

In early stages of society, women are the physicians; while the men fight and hunt, women gather herbs and decoct salves for their wounds; and the art would naturally become a sort of profession in the hands of the older women who had reputation for superior skill of that kind. Mostly a blind groping—a mystery to themselves as well as others—their operations were viewed with awe. The 'wise woman,' with her kettle, cooking her mysterious broth, adding ingredient after ingredient (for the rarer, the more numerous and horrible they were, would not the compound be the more efficacious?), inspired not only hope, but fear; for the art might be, and doubtless was, used to hurt as well as to heal. Roman matrons were often accused and convicted of poisoning by their decoctions; and during seasons of pes-

tilence, these female druggists were persecuted with indiscriminate fury, as were witches afterward in Europe. So much was the notion of poisoning uppermost in the Roman mind respecting them, that *venefica*, literally 'a poison-maker,' was the general name for a preparer of magic medicines, an enchantress or sorceress—the corresponding character to our witch: see WITCHCRAFT.

The operation of magical medicines was not, as with those of the modern pharmacopœia, confined to physical effects on living bodies to which they were applied; associated with incantations and other ceremonies, as they always were, they could be made to produce almost any desired effect—raise or lay storms, fertilize a field, or blast it; kill or cure a man, absent as well as present; and give the power of predicting future events. How a belief in imaginary virtues of things may grow out of the experience of their real virtues, is indicated by Dr. Livingstone, when speaking of the belief in rain-making among the tribes in the heart of s. Africa. The African priest and the medicine-man are one and the same, and his chief function is to make the clouds give out rain. The preparations for this purpose are various—charcoal made of burned bats; internal parts of animals, as lions' hearts and hairy calculi from the bowels of old cows; serpents' skins and vertebræ; and every kind of tuber, bulb, root and plant to be found in the country. 'Although you disbelieve their efficacy in charming the clouds to pour out their refreshing treasures, yet, conscious that civility is useful everywhere, you kindly state that you think they are mistaken as to their power; the rain-doctor selects a particular bulbous root, pounds it, and administers a cold infusion to a sleep, which in five minutes afterward expires in convulsions. Part of the same bulb is converted into smoke, and ascends toward the sky; rain follows in a day or two. The inference is obvious.' The religion of this part of Africa may be characterized as medicine-worship. In a village of the Balonda, Dr. Livingstone saw two pots with charms or medicines kept in a little shed, like idols in a niche. For an idol they sometimes take a piece of wood, and carve a human head on it, or simply a crooked stick, when there is no professed carver to be had; but there is nothing divine about it until it is dotted over with a mixture of medicine and red ochre. Packets of medicine are worn as charms about the person, to ward off evils of all kinds. The female chief Manenko was hung all over with such charms; and when she had to cross a river, her travelling medicine man waved medicines over her, and she took some in her hand to save her from drowning.

During the middle ages, and almost till the 18th c., magic was greatly studied in Europe, and could boast of distinguished names, who attempted to treat it as a grand and mysterious science, by which the secrets of nature could be discovered, and a certain god-like power acquired over the 'spirits' (or, as we should now say,

MAGIC MIRROR OF JAPAN.

the 'forces') of the elements. The principal students and professors of magic during the period referred to, were Pope Sylvester II., Albertus Magnus, Roger Bacon, Raymond Lully, Pico della Mirandola, Paracelsus, Cornelius Agrippa, Trithemius, Van Helmont, and Jerome Cardan.—See Horst's *Von der Alten und Neuen Magie, Ursprung, Idee, Umfang und Geschichte* (Mentz 1820); and Ennemoser's *Geschichte der Magie* (2d ed. Leip. 1844: translated into English by W. Howitt, 2 vols. Lond. 1854). For an interesting account of the discipline and ceremonies of the 'art,' consult the *Dogme et Rituel de la Haute Magie* (Paris 1856), by Levi; and *Histoire de la Magie*, by Christian (Paris 1870).

For some of the different forms which the belief in magic has assumed, see AMULET: AUGURIES AND AUSPICES: DIVINATION: INCANTATION: WITCHCRAFT: also ALCHEMY: ASTROLOGY.

MAGIC LANTERN: optical instrument by which magnified images of small pictures are thrown upon a wall or screen. The instrument consists of a lantern containing a powerful argand lamp; in the side of the lantern is inserted a horizontal tube, on a level with the flame, and the light is made to pass through the tube by reflection from a concave mirror placed on the opposite side of the lantern. The tube is furnished with two lenses, one at each end; the inner one is a hemispherical illuminating lens of short focus, to condense a strong light on the picture, which is inserted into the tube, between the lenses, through a transverse slit. The other end of the tube is fitted with a double convex lens, which receives the rays after passing through the picture, and throws them upon the screen or wall. The pictures are formed with transparent varnish on glass slides, and must be inserted into the tube in an inverted position, in order that the images may appear erect. If the screen on which the image is thrown be at too great a distance, the image will become *indistinct* from the lessened intensity of the light, and *distorted* by the increasing spherical and chromatic aberration, though this latter defect may be obviated by the use of a screen of the same curvature as the outside surface of the lens. This instrument, generally used as a toy, is occasionally used to produce enlarged representations of astronomical diagrams, so that they may be well seen by an assembly. Phantasmagoria, dissolving views, etc., are produced by a particular manipulation of the same instrument.

MAGIC MIRROR OF JAPAN: a kind of mirror having a curious property of reflection, long a puzzle to scientists. The common mirror is one of the most conspicuous and universally diffused artificial objects in Japan. It is seen in the temples; in the hands of the street-conjurors; in all private houses, even in those nearly destitute of other furniture; in pictures; in the royal regalia. It is the most important part of a woman's trousseau. 'The two Great Divine Palaces,' at Isé, which harbor the first-made Mirror, command the same reverence

from the Japanese that the Holy Sepulchre commands from the Greeks and Armenians. The sun-goddess in a rage—so runs the Japanese myth—shut herself up in a cave out of which she was enticed only by a mirror, then, in such sore extremity, first devised and made. It is usually circular, 3 to 12 inches in diameter, of bronze, with bronze handle encased in bamboo; the reflecting surface, polished by a mercurial amalgam, is more or less convex; the back displays a finely executed raised design of birds, flowers, dragons, some scene of Japanese mythology; occasionally, also, a few Chinese characters signifying long life, happiness, etc.

The magic property is possessed by but two or three per cent. of mirrors, and these cost 10 or 20 times as much as the rest. It consists in the fact, that when looked at directly, the mirror reflects the objects in front like ordinary mirrors; but when a bright light is reflected from its polished face upon a screen, a bright-lined image on a dark ground, representing more or less perfectly the figures on the back of the mirror, is seen depicted on the screen.

The explanation of this property has been the object of long and manifold discussion, from the 13th c. till the present day. Sir David Brewster and Sir Charles Wheatstone were of opinion that the phenomenon was due to a copy of the figures on the back being drawn on the polished face, but so skilfully concealed as to be invisible in ordinary lights. More recent theories ascribe the cause to the difference of density in the bronze plate; but Professors Ayrton and Perry have, ultimately, demonstrated that the phenomenon arises from inequality of curvature in the polished surface, the thicker portions (having the figures to the back), being *flatter* than the remainder of the convex surface.

MAGIC SQUARES—MAGILUS.

MAGIC SQUARES: species of puzzle which occupied the attention of many celebrated mathematicians from the earliest times till the 18th c. The magic square is a square divided by lines parallel to the sides into a number of smaller equal squares or cells, in which are inserted numbers which form the terms of one or more progressions (generally arithmetical), in such an order that each line of numbers, whether added horizontally, vertically, or diagonally, shall amount to the same sum. This arrangement is effected in three different ways, according to the number of cells in the side of each square, and can be effected most easily when this number is *odd*, or *evenly even* (divisible by 4), but becomes a problem of considerable difficulty when the number of cells is *oddly even* (divisible by 2, and not by 4). The following are examples of the first two methods:

13	3	2	16
12	6	7	9
8	10	11	5
1	15	14	4

9	2	25	18	11
3	21	19	12	10
22	20	13	6	4
16	14	7	5	23
15	8	1	24	17

The arrangement for the oddly even squares is the same as that for the evenly even ones, with the exception of a few transpositions. The only exception is when the number of squares or cells is four. Dr. Franklin invented a similar puzzle to this, called the 'magic circle.' See *Hutton's Recreations in Mathematical Science*, I.

MAGILP, n. *ma-gĭlp'*, or **MAGILPH**, n. *ma-gĭlf'*, or **MEG-GELLUP**, n. *mĕg'ĕl-ŭp* [unascertained]: mixture of linseed-oil and mastic varnish, thinned with turpentine as requisite, used by artists as a vehicle for colors.

MAGILUS, *măj'ĭl-ŭs*: very curious genus of gasteropodous mollusks, of the ord. *Tubulibranchiata*, inhabit-



Shell of Magilus.

ing the Red Sea and the Indian Ocean. They have, at first, shells of the ordinary form of spiral univalves, and establish themselves in little hollows of madrepores, where they remain, enlarging the shell into a long tube

as the madreporæ grows, and thus preventing themselves from being shut in. The tube is sometimes three ft. long, and the animal deserts entirely the spiral part of the shell, and lives in the mouth of the tube, which it closes against danger by an operculum, the upper part being wholly or partially filled up with solid matter.

MAGINDANA'O, or MINDANA'O: see PHILIPPINE ISLANDS.

MAGISTERY, n. *măj'is-tēr-ī* [L. *magistēr'ium*, the post of a leader—from *magis'ter*, a master]: a term used by the old chemists to denote precipitates from certain solutions; a chemical combination resulting in a body of a different kind; powerful medical influence.

MAGISTRAL, n. *măj'is-trāl* [Sp. *magistral*, masterly—from L. *magister*, a master]: among the Spanish smelters of S. America and Mexico, the roasted and powdered copper pyrites added to certain ores of silver for reducing them.

MAGISTRATE, n. *măj'is-trāt* [F. *magistrat*—from L. *magistrātus*, the office or rank of a master or chief—from *magister*, a master]: public civil officer of any rank from the lowest to the highest, who is invested with executive or judicial authority; term commonly denoting a justice of the peace (q.v.). MAGISTERIAL, a. *măj'is-tēr'ī-āl*, pertaining to a magistrate; authoritative; lofty; despotic. MAG'ISTERIALLY, ad. -lī. MAG'ISTERIALNESS, n. -nēs, the air and manner of a master; imperiousness. MAGISTRACY, n. *măj'is-trā-sī*, the office or dignity of a magistrate; the body of magistrates.—SYN. of 'magisterial': dogmatical; arrogant; stately; august; pompous; imperial; lordly; haughty; proud; domineering; dignified; commanding.

MAGLIABECHI, *mâ-lyâ-bĕk'ĕ*, ANTONIO DA MARCO: Italian scholar and court librarian: 1633, Oct. 28—1714, July 4; b. Florence; of respectable but indigent family. From his earliest years, he displayed an inordinate passion for book-knowledge. Having speedily mastered the Greek, Latin, and Hebrew languages, he literally entombed himself among books, of which disorderly piles enumbered every portion of his dwelling, and lay in a heterogeneous litter around his feet. In his daily habits, M. grew regardless of social and sanitary requirements; and such was his avidity of study, that he finally denied himself even requisite repose. His memory was prodigious, and not only enabled him minutely to retain the contents of his multitudinous books, but also to supply, on occasion, the most exact reference to any particular page or paragraph, the place of each book being indicated with precision in the midst of their apparently inextricable masses. M. was regarded as the literary prodigy of his times. He was appointed court-librarian by the grand dukes of Florence; and the many tributes of respect tendered by royal and distinguished personages to his wonderful erudition, fostered in an inordinate degree his love of fame and praise,

which rendered him intolerant of literary merit in others, and involved him in bitter literary squabbles. He died at Florence, in the 81st year of his age, leaving no written record of his immense encyclopedic knowledge. His valuable library of 30,000 vols. he bequeathed to the grand duke, who passed it over to M.'s native city of Florence; it is now a free library, and bears the name of its collector.

MAGMA, n. *măg'mă* [L. and Gr. *magma*, the dregs of an unguent]: dregs; a crude mixture of mineral or organic matter in a pasty state.

MAGNA CHARTĀ, n. *măg'nă kâr'tă* [L. *magna*, great; *charta*, paper, a charter]: the great charter obtained by the Eng. barons from King John of England, 1215, June 15; viewed by after-ages as the basis of English liberties. The oppressions and exactions of a tyrannical and dastardly sovereign called into existence a confederacy of the barons or tenants-in-chief of the crown, who took up arms for redress of their grievances. Their demand was for the restoration of the laws of Henry I.; laws which might probably be characterized as an engrafting of Norman feudalism on the 'ancient custom of England,' or previously existing Saxon and Danish free institutions, in which 'ancient custom' were comprehended the laws of Edward the Confessor. A conference between the sovereign and the barons was held at Runnymede, near Windsor, a place where treaties regarding the peace of the kingdom had often before been made. King and barons encamped opposite each other; and after several days' debate, John signed and sealed the charter with great solemnity.

The Great Charter reared up a barrier against the abuse of the royal prerogative by a series of provisions for the protection of the rights and obligations of the feudal proprietor. It redressed a variety of grievances connected with feudal tenures, some of them now so long obsolete as to be with difficulty intelligible. There are minute provisions regarding the relief of heirs, wardship, marriage of heirs and of their widows. No scutage or aid is to be imposed without the authority of the common council of the kingdom, except on the three great feudal occasions of the king's captivity, the knighting of his eldest son, and the marriage of his eldest daughter. The liberties of the city of London, and other towns, burghs, and ports, are declared inviolable. Freedom of commerce is guaranteed to foreign merchants. Justice is no longer to be sold, denied, or delayed. The court of common pleas, instead of, as formerly, following the king's person in all his progresses, is to be permanently fixed at Westminster; assizes are to be held in the several counties, and annual circuits are established. Regulations are made for the efficiency of the inferior courts of justice. The protection of life, liberty, and property from arbitrary spoliation is the most important feature of the charter. 'No freeman shall be taken or imprisoned, or be disseised of his freehold, or liberties, or free

customs, or be otherwise damaged, nor will we pass upon him, nor send upon him, but by lawful judgment of his peers, or by the law of the land'—a provision which recognized a popular tribunal as a check on the official judges, and may be deemed the basis of the writ of Habeas Corpus. No one is to be condemned on rumors or suspicions, but only on the evidence of witnesses. Protection is afforded against excessive amercements, illegal distresses, and various processes for debts and services due to the crown. The fines imposed are in all cases to be proportioned to the magnitude of the offense, and even the villein or rustic is not to be deprived of his necessary chattels. There are provisions regarding the forfeiture of lands for felony. The testamentary power of the subject is recognized over part of his personal estate, and the rest is to be divided between his widow and children. The independence of the church is also provided for.

These are the most important features of that Charter which occupies so conspicuous a place in history, and which establishes the supremacy of the law of England over the will of the monarch. A charter was at the same time granted to mitigate the oppressions of the Forest Laws (q.v.). The terms dictated by the barons to John included the surrender of London to their charge, and the Tower to the custody of the primate till Aug. 15 following, or till the execution of the several articles of the Great Charter. 25 barons, as conservators of the public liberties, were invested with extraordinary authority, which empowered them to make war against the sovereign in case of his violation of the Charter. Several solemn ratifications were required by the barons both from John and from Henry III.; and a copy of the Great Charter was sent to every cathedral, and ordered to be read publicly twice a year. The copy preserved in Lincoln Cathedral is regarded as the most accurate and complete; and a fac-simile of it was engraved by order of the late board of commissioners on the public records. The Great Charter and Charter of the Forests are printed with English translations, and prefixed to the edition of the Statutes of the Realm published by the Record Commission.

MAGNA GRÆCIA, *măg'na grē'shī-a* (Gr. *Hē Megalē Hellas*): ancient name of that part of s. Italy which was thickly planted with Greek colonies. When it first obtained this appellation, is unknown, but it must have been at an early period. Polybius says it was so called in the time of Pythagoras. Some writers include under the term the Greek cities in Sicily; others restrict it to those on the Gulf of Tarentum, but in general it is used to denote all the Greek cities in s. Italy, exclusive of those in Sicily. The oldest settlement is believed to have been *Cumæ*—though it is doubtful whether it and its colonies, *Dicæarchia* and *Neapolis*, were really embraced under the designation M. G.; while the period assigned to its foundation—viz., soon after the Trojan

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war—is obviously faneiful. If we fix about B.C. 8th or 9th c. we shall probably be not far wrong. Of the other Greek settlements in Italy—most, if not all of which were later than those in Sicily—the earliest was Sybaris (founded by the Achæans B.C. 720); next, Croton (by the Achæans, B.C. 710); then Tarentum (by the Spartans, B.C. 708); Loeri (by the Loerians, B.C. 708, according to others, 30 or 40 years later); Rhegium (by the Chaleidians; date of origin not known, but believed by some to be older than even Sybaris); Metapontum (by the Achæans, B.C. 700–680); and Velia (by the Phocæans, B.C. 540). These cities became parents of many others.

Of the earlier history of M.G., we know almost nothing. The settlements appear to have risen rapidly to power and wealth, partly by the brisk commerce which they carried on with the mother-country; partly also, it is conjectured, by an amalgamation with the Pelasgic (and therefore kindred) natives of the interior. This, we are told by Polybius, actually happened at Loeri, and most probably elsewhere also. About B.C. 530, Pythagoras the philosopher arrived at Crotona, and soon acquired an influence in M. G. which was quite wonderful, though it did not last long. The quarrels between the different cities were often bitter and bloody; and finally, B.C. 272–271, the Romans conquered the whole of Lower Italy. Long before this, several of the cities had disappeared. Sybaris, for example, was destroyed by the Crotonians as early as B.C. 510; and the rest more or less rapidly sank into decay, and were, in the time of Cicero, with a few exceptions, reduced to utter ruin.

MAGNANIMOUS, a. *măg-năn'î-mūs* [L. *magnanimus*, great-souled—from *magnus*, great; *animus*, soul, mind: It. *magnanimo*; F. *magnanime*, magnanimous]: great of mind; elevated in soul or sentiment; not selfish; disinterested. **MAGNANIMOUSLY**, ad. *-lî*. **MAGNANIMITY**, n. *măg'nă-nîm'î-tî* [F. *magnanimité*]: greatness of mind; elevation in soul or in sentiment; great generosity and disinterestedness.

MAGNATE, n. *măg'nât*, **MAGNATES**, n. plu. *-nâts* [F. *magnats*, grandees of Poland or Hungary—from mid. L. *magnâtēs*, the greater vassals—from L. *magnus*, great]: a noble or grandee; a man of rank and wealth.

MAGNESIA, n. *măg-nē'shî-ă* [F. *magnésie*, magnesia: Gr. *magnētēs*, the loadstone or magnet: *Magnesia*, a country of Thessaly—*lit.*, the Magnesian stone]: one of the primitive earths, used in medicine in the form of a white, light, tasteless powder; oxide of the metal magnesium (see **MAGNESIUM**, below). **MAGNESIAN**, a. *măg-nē'shî-ăn*, resembling or containing magnesia. **MAGNESIC**, *măg-nē'zîk*, of or pertaining to magnesia. **MAGNESITE**, n. *măg'nē-zît*, a native carbonate of magnesia occurring in white, hard, stony masses. **MAGNESIUM**, n. *-shî-ŭm*, an elementary body forming the metallic base of magnesia—nearly related to zinc by its properties; in *OE.*, a

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mineral (see below). MAGNESIUM LIGHT, a brilliant light produced by burning magnesium wire (see below). SULPHATE OF MAGNESIA, the well-known Epsom salt. MAGNESIA ALUM, a substance occurring in white fibrous masses and efflorescences in S. Amer. MAGNESIAN LIMESTONE, any limestone containing upward of 20 per cent of magnesia: see DOLOMITE.

MAGNESIA, *măg-ně'shĭ-a*: most eastern division of Thessaly in anc. Greece; narrow mountainous region between the chain of Ossa on the w. and the sea on the e., s. of the river Pencus. The powers of natural *magnets* were observed by the Greeks first in this district; whence the name.

MAGNE'SIA AD MÆAN'DRUM: ancient city of Ionia, near the Mæander (whence its name); 15 Roman m. from Miletus and about as far from Ephesus. It was settled by a Thessalian tribe of the Magnetes, and was not one of the cities of the Ionic league. It was very prosperous and rich, and had a very famous temple of Artemis, a rival to that at Ephesus. The ruins of the temple have recently been brought to light by excavation.

MAGNE'SIA AD SIP'YLUM: ancient city in n. Lydia, near the Hermus, at foot of Mt. Sipylus (whence its name): see MANISA.

MAGNESIUM.

MAGNESIUM (symb. Mg. eq. 24—sp. gr. 1.74): generally ranked with those metals whose oxides form the alkaline earths (baryta, strontia, lime), but in many respects more closely resembling zinc. It is a malleable ductile metal, of the color and brilliancy of silver. It fuses at about the melting-point of tin (about 442°), and at an extreme heat it may be distilled like zinc. When ignited in dry air or in oxygen gas, it burns with extraordinary brilliancy, and is oxidized into magnesia. M. now has quite an extensive use in photography for producing light for views of interiors and dimly lighted places. The dust of the metal is generally used, producing a 'flash light' of exceedingly brief duration. In dry air, it undergoes little change, and is much less oxidizable than the other metals of the same group. It does not decompose cold water; but if the water be heated to about 90° , there is a slight evolution of hydrogen; and if the temperature is raised to 212° , hydrogen is given off rapidly and abundantly. When thrown into strong hydrochloric acid, it inflames and becomes converted into chloride of magnesium, while hydrogen is given off.

It is obtained from its chloride either by the action of sodium or potassium, or by simple electrolytic decomposition; but the ordinary processes are difficult, and yield the metal in only minute quantities. A patent has, however, been taken out by Sonstadt for improvements in its manufacture, by which it can be produced by the pound: see **MAGNESIUM LIGHT**.

Magnesia (MgO) is the only oxide of magnesium. It is a white bulky powder, devoid of taste or smell, and having a sp. gr. of 3.65; it is infusible, and almost insoluble in water; and when placed on moistened test-paper, is seen to have an alkaline reaction. When mixed with water, it gradually forms a hydrate ($\text{Mg}(\text{OH})_2$), without, as in the case of lime, any sensible elevation of heat, and this hydrate slowly absorbs carbonic acid from the atmosphere. Magnesia does not occur native, and is usually obtained by the prolonged application of heat to the carbonate. Magnesium hydrate occurs naturally in crystalline form in the mineral *Brucite*.

Magnesia Alba, the common white magnesia of commerce, is a mixture of magnesium hydrate and of hydrated carbonate. It is obtained by the precipitation of a hot solution of magnesium sulphate by a hot solution of potassium or sodium carbonate, and by then collecting and drying the deposit.

Of the *magnesium salts*, some are soluble, and some insoluble in water. The soluble salts have a peculiar and very bitter taste, and hence the German name *Bittererde* (bitter earth) for magnesia. All the salts which are insoluble in water, except the silicate, dissolve in hydrochloric and nitric acids.

Magnesium Carbonate occurs native in the mineral *magnesite*, and in association with calcium carbonate in a kind of marble called *Dolomite* (q.v.), from which it may be

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manufactured in a very pure state by Pattinson's process, which consists essentially in the following steps. Finely ground dolomite is exposed for some time to a red heat, by which the magnesium carbonate is decomposed; the powder is then introduced into a very strong vessel, where it is mixed with water, and carbonic acid gas forced in under heavy pressure till it ceases to be absorbed; the magnesium carbonate becomes dissolved as bicarbonate, while the calcium carbonate remains unchanged; on boiling the clear liquid, magnesium carbonate is deposited, and carbonic acid expelled.

Magnesium Sulphate, or *Epsom Salts* ($\text{MgSO}_4 + 7\text{Aq}$), is the most important of the magnesium salts. It is obtained from sea-water, or from magnesian limestone (dolomite), or from the mother-liquor of alum-works, and is a common ingredient in mineral waters (see EP-SOM SALT). It is soluble in three times its weight of water at 60° , and in less water at higher temperature, the solution having a bitter, disagreeable taste.

Magnesium Nitrate ($\text{Mg}(\text{NO}_3)_2 + 6\text{Aq}$) occurs in certain mineral waters, but is of no special importance.

A *Magnesium Phosphate*, having the formula $\text{MgHPO}_4 + 7\text{Aq}$, is obtained by the mixture of solutions of magnesium sulphate and of ordinary sodium phosphate. It occurs either in an amorphous state or in six-sided prisms, according as the solutions are more or less concentrated. This salt is a constituent of the seeds of wheat and the other cereals, of bones, and of various morbid concretions. The *Magnesium Ammonium Phosphate* known also as *Ammoniaco-magnesian Phosphate* and as *Triple Phosphate* ($\text{Mg}(\text{NH}_4)\text{PO}_4 + 6\text{Aq}$), is a more important salt than the preceding. It occurs either in minute crystalline grains, or in beautiful transparent four-sided prisms of considerable size, and with a very characteristic appearance. The formation of the salt, which is only slightly soluble in pure water, and still more insoluble in water containing free ammonia or ammonium chloride, not only furnishes a very delicate test for the presence of magnesium, but enables us to determine its quantity. This magnesium ammonium phosphate is readily formed by mixing a solution of a magnesium salt with ammonium chloride, sodium phosphate, and a little free ammonia. It is an occasional constituent of urinary calculi, and crystallizes in beautiful prisms from urine and other animal fluids, when they begin to putrefy. It is also frequently present in the excrements in cases of diarrhea.

The *magnesium silicates* are numerous. A large number of minerals are formed either wholly or partly of them, among which are Olivine or Chrysolite, Tale, Steatite or Soapstone, Meerschaum, Serpentine, Augite, Hornblende, etc.

The haloid salts of magnesium—the chloride, iodide, and bromide—are of no special interest, except that magnesium chloride is, next to sodium chloride, the most abundant of the salts in sea-water.

The compounds of magnesium employed in medicine are magnesia, its carbonate and its sulphate.

Magnesia is presented in small doses (from ten grains to a scruple), as an antacid, in cases of undue acidity of the stomach, heartburn, and abnormal acidity of the urine; in larger doses (from a scruple to a drachm), it produces distinct purgative effects. It is useful, especially when combined with rhubarb and a little ginger (in the form of Compound Rhubarb Powder or Gregory's Mixture), as a purgative for children, in acid conditions of the alimentary canal.

Magnesium carbonate (*magnesia alba*) acts in the same manner as magnesia, except that it is less active, since more than half of it consists of water and carbonic acid. Dinneford's Solution of Magnesia, and other fluid preparations of the same nature, are made by dissolving this salt in water charged with carbonic acid. A drachm of carbonate of magnesia, the juice of one lemon, and a wine-glassful of water, constitute an agreeable laxative, a magnesium citrate being thus formed.

Magnesium sulphate is a purgative in very general use. It is much employed in febrile affections, and when the portal system is congested; but it may be used in almost any case in which a mild but efficient laxative is required. Its dose varies from two to four or six drachms. In combination with the infusion of senna, it forms the ordinary *Black Draught*.

MAGNESIUM LIGHT: brilliant light produced by burning magnesium wire. Although the discovery of the metal magnesium was made by Sir H. Davy 1808, it was little more than a chemical curiosity for about half a century. In 1830, a French chemist, Bussy, obtained globules of the metal; and 1856 Deville and Caron obtained magnesium on a larger scale than any of their predecessors. In 1859, Bunsen of Heidelberg, and Roscoe (now of Manchester, England), published a Memoir on the great importance of magnesium for photographic purposes, owing to the high refrangibility and the great actinic power of the light emitted by burning magnesium-wire. In 1862, Sonstadt succeeded in producing specimens of the metal, varying from the size of a pin's head to that of a hen's egg; and soon began manufacturing on a considerable scale.

The magnesium light has many advantages. Its color approaches very much nearer to daylight than that of the light from oils, candles or coal-gas. As compared with the sun, its luminous intensity is $\frac{1}{525}$, but its chemical intensity is $\frac{1}{35}$, and this high actinic power makes it specially valuable for photographic purposes; it gives off no noxious vapors; but as it burns, white clouds of the vapor of magnesia are formed. It has been used for photography, and for exploring and photographing dim or underground caverns and structures—such as the Pyramids. It cannot, however, compete with the electric light as now perfected, and is much more costly. Still, for any purpose where, for a comparatively brief

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time, a very intense light is required, magnesium wire or ribbon has about it almost the simplicity of a wax taper; nor are the lamps at all complex by which the metal may be burned for hours continuously. Its use is almost wholly for burning in photographic lamps, for flash lights, and for fire-works. It has been attempted to make magnesium useful for other purposes. Various alloys have been made with it and other metals, such as lead, tin, zinc, cadmium, and silver; but they all are brittle and liable to change.

MAGNET, n. *măg'nět* [OF. *magnete* for *manete*—from L. *magnētem*, magnesian; Gr. *magnētēs*, for *lithos magnētēs*, the magnesian stone, the magnet—said to be so called from *Magnesia* in Thessaly, where first found: It. *magnete*, a magnet]: the loadstone (q.v.), which has the property of attracting iron, and of pointing to the poles when freely suspended; a bar of steel, to which the properties of the loadstone are imparted by contact; any piece of iron rendered powerfully attractive by a galvanic current; any powerful attraction (see **MAGNETISM**, below). **MAGNETIC**, a. *măg-nět'ik*, or **MAGNET'ICAL**, a. *-i-kăl*, possessing the property of attracting iron; attractive; having the peculiar property of turning due north and south when left freely suspended. **MAGNET'ICALLY**, ad. *-kăl-lī*. **MAGNET'ICALNESS**, n. *-nēs*, the quality of being magnetic. **MAGNETICS**, n. plu. *măg-nět'iks*, the science or principles of magnetism. **MAGNETIZE**, v. *măg'nět-iz*, to render magnetic; to affect with magnetism. **MAG'NETIZING**, imp. **MAG'NETIZED**, pp. *-izd*. **MAG'NETIZER**, n. *-iz-ér*, one who or that which imparts magnetism. **MAG'NETISM**, n. *-izm*, the peculiar attractive and repulsive power of the natural magnet or loadstone; the peculiar property or power possessed by many mineral bodies, by which, under certain circumstances, they attract and repel one another according to determinate laws; the cause of the attractive power of the magnet; the science which investigates the phenomena and laws of the attractive power of the magnet, and other bodies in a magnetic state (see **MAGNETISM**, below). **MAGNETIZATION**, n. *măg'nět-i-ză'shŭn*, the bringing into a magnetic condition; the state of the object so brought. **MAGNETITE**, n. *măg'nět-īt*, one of the richest and most important of the ores of iron, and that from which the finest kinds of steel are made—also called **MAGNETIC IRON**, or black oxide of iron (see **LOADSTONE**). **MAGNETIC BATTERY**, a combination of magnets with the like poles similarly disposed so as to act together with great power. **MAGNETIC DIP**: see **DIP**. **MAGNETIC EQUATOR**, the line around the equatorial parts of the earth where the dipping-needle rests horizontally. **MAGNETIC FLUID**, the hypothetical fluid to which the various phenomena of magnetism are usually referred. **MAGNETIC MERIDIAN**, the mean direction which a freely suspended horizontal needle assumes when left to itself. **MAGNETIC NEEDLE**, the magnetized steel needle of the mariner's compass. **MAGNETIC POLES**,

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the two points in the higher northern and southern regions where the needle dips and becomes vertical or perpendicular to the horizon—the north pole of the needle dipping in the north, and the south pole in the south. **MAGNETIC TELEGRAPH**, a telegraph worked by electro-magnetism. **MAGNETO-ELECTRICITY**, n. *măg-nĕt'ō-*, the electric phenomena produced by magnetism (see **MAGNETISM**, below). **MAGNETO-ELECTRIC**, a. pertaining to or exhibiting magneto-electricity. **ANIMAL MAGNETISM**, a supposed agent of a mysterious nature, which is said to have a powerful influence on a person through contact with an operator, or by the exertion of *will* on the part of another; mesmerism (see **HYPNOTISM**).

MAGNETIC BELTS: see **ELECTRICITY, MEDICAL**.

MAGNETIC CURES: supposed by physicians of old to be wrought by the magnet, which, it was believed, exercised an important influence on the human body, or on the bodies of certain persons; as shown in the alleviation of headache, toothache, cramp, etc. It has, however, been proved that the magnet as such has no influence on animal organisms, and that accordingly all cures professedly resting on such action have been due to delusion or deceit. But it is quite otherwise with magneto-electricity and galvanism: see **ELECTRICITY, MEDICAL**.

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MAGNETISM: peculiar property in certain bodies of attraction or repulsion according to determinate laws. Bodies exhibiting this property are called magnets, and are variously characterized. Thus, magnets are natural (Loadstone, q.v.), or artificial; permanent (steel masses magnetized by the action of other magnets or of an electric current), or temporary (soft iron masses magnetized by magnets, or the so-called electro-magnets, soft iron masses round which a current is passing).

Polarity of the Magnet.—When a small soft iron, nickel, or cobalt ball is suspended by a thread, and a magnet (fig. 1) is passed along in front of it from one end to the other, the ball is powerfully attracted toward the ends, but not at all by the middle of the magnet. The points of the magnet toward which the attractive power becomes greatest are called its poles. By causing a small magnetic needle

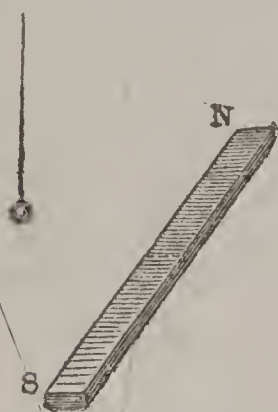


Fig. 1.

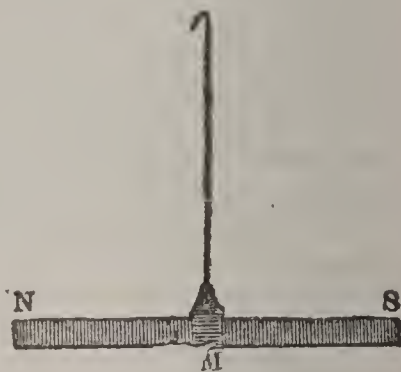


Fig. 2.

moving horizontally to vibrate in front of the different parts of a magnet placed vertically, and counting the number of vibrations, the rate of variation of the attractive power may be exactly found. When the poles of one magnet are made to act on those of another a striking dissimilarity between the poles is brought to light. To show this, let us suspend a magnet, NS, fig. 2, by a band of paper, M, hanging from a cocoon thread (a thread without torsion); or let us pivot it, or lay it on a float on water. When the magnet is left to itself it takes up a fixed position, one end keeping north, and the other south. The n. pole cannot, except in unstable equilibrium, be made to stand as a s. pole, or *vice versâ*; for, when the magnet is disturbed, both poles return to their original positions. Here, then, is a striking dissimilarity in the poles, by means of which we are enabled to distinguish them as *north pole* and *south pole*. Let us now try the effect of another magnet upon it when thus suspended; and we shall find that the pole of the suspended magnet which is attracted by one of the poles of the second magnet is repelled by the other, and *vice versâ*; and where the one pole attracts, the other repels. If, now, the second magnet be hung like the first, it will be found that the pole which attracted the n. pole of the first magnet is a s. pole, and that the pole which repelled it is a n. pole. We thus learn that *each magnet has two poles, the one a north, and the other a south pole, alike in their power of attracting soft iron. The differ-*

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ing in their action on the poles of another magnet, like poles repelling, and unlike poles attracting each other.

The attractions and repulsions are found in a bar-magnet to follow the same laws of distribution as would have been obeyed by the forces due to two *equal* isolated disks, the one attracting, the other repelling, and situated at points a little short of the extreme ends of the bar; and the places where these imaginary disks of imaginary magnetic matter would be are called the poles of the magnet. This conception of imaginary magnetic matter greatly facilitates many calculations, and is largely applied. It is as if the one kind of pole consisted of positive, the other of negative matter; and the n. pole of a magnet is, in accordance with this order of ideas, conventionally termed the positive pole.

No Isolated Poles.—If we try to cut a bar-magnet so as to isolate the poles, we find that each half has developed a new pole at the broken end, and each half has become a separate magnet whose poles are equal to one another, and to the poles of the original magnet. *We can therefore never have one kind of magnetism without having it associated in the same magnet with an equal amount of the opposite magnetism.*

The Earth a Magnet.—The fact of the freely suspended magnet taking up a fixed position has led to the theory (Gilbert, q.v., in 1600) that the earth itself is a huge magnet, having its n. and s. magnetic poles in the neighborhood of the poles of the axis of rotation, and that the magnetic needle or suspended magnet turns to these as it does to those of a neighboring magnet. All the manifestations of terrestrial magnetism (q.v.) give decided confirmation of this theory. It is on this view that the French call the north-seeking pole of the magnet the s. pole (*pôle austral*), and the south-seeking the n. pole (*pôle boréal*); for, if the earth be taken as the standard, its north magnetic pole must attract the south pole of other magnets, and *vice versa*. In England and Germany the n. pole of a magnet is the one which, when freely suspended, points to the n., and no reference is made to its relation to the magnetism of the earth.

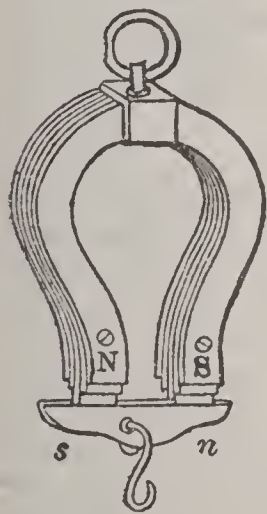


Fig. 3.

Form of Magnets.—Artificial permanent magnets are either bar-magnets or horse-shoe-magnets. When powerful permanent magnets are to be made, several thin magnetized bars are placed side by side with their poles lying in the same direction. Such a collection of magnets is called a *magnetic magazine or battery*, and is more powerful than a solid bar of the same weight and size, because thin bars can be more strongly and regularly magnetized than thick ones. Fig. 3 is a horseshoe magnetic magazine. The central lamina protrudes slightly, and it is to

it that the armature is attached, the whole action of the magnet being concentrated on the projection. The mag-

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netic needle is a small single permanent magnet nicely balanced on a fine point: see COMPASS.

The Magnetic Field.—The region surrounding a magnet (even, to a diminishing extent, to an infinite distance) is in a peculiar condition. If a magnet be laid on a piece of glass, and soft iron filings be sprinkled on it, each filing will assume a particular direction, and the whole congeries will map out the lines of the directions in which small magnets will be made to point by the play of the magnetic forces existing around the magnet, in the 'magnetic field' of that magnet. These directions are the Lines of Force in the magnetic field filling all space; and an illustration of them is given in fig 4, which shows the arrangement of the filings above a bar-magnet, laid parallel to the glass. In a horseshoe magnet the strongest part of the field external to the magnet is that lying between the poles; the lines of force are there crowded together.



Fig. 4.

Magnetic Induction.—These lines of force external to the magnet are also Lines of Induction. In the direction of the lines of induction a magnetic separation tends to be set up; the soft iron filings are each converted, while in the neighborhood of the magnet, into temporary magnets, each with a n. and a s. pole; one pole is repelled, the other attracted; on the whole each filing is swivelled round into the direction of the local line of force. Similarly, a bar of soft iron becomes, while in contact with a magnet, as in fig. 5, or to a less extent when in its neighborhood, itself



Fig. 5.

a temporary magnet; and it may in its turn magnetize and support other bars, so that a chain of soft iron bars may, up to a limiting weight, be supported on a magnet. Steel bars are slower than soft iron in taking up a magnetic condition, and the harder their temper the slower they are in doing so; but, unlike soft iron, they do not readily lose what they have acquired; they become permanent magnets, while soft iron retains magnetism only precariously, and easily loses it when mechanically disturbed. Specially soft iron may lose the whole when struck; ordinary wrought-iron will generally retain traces of residual magnetism, the amount of which depends on the previous magnetic history of the particular bar. The characteristically magnetic substances are iron, nickel, and cobalt; but many

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others, even liquids (such as solutions of salts of iron) and gases (such as ozone), are attracted by the magnet.

Diamagnetism.—Most substances are (in the form of spheres) feebly repelled by magnets, and bars of them lie across the lines of induction in a non-uniform magnetic field. These substances are said to be diamagnetic—e.g., bismuth.

Magnetization by the Earth.—The inductive action of terrestrial magnetism is a striking proof of the theory above referred to, that the earth itself is a magnet. When a steel rod is held in a position parallel to the Dipping-needle (q.v.) it becomes in the course of time, and the sooner if struck with a hammer, permanently magnetic. A bar of soft iron held in the same position is more powerfully but only temporarily affected. We may understand from this how the tools in workshops are generally magnetic. Whenever large masses of iron are stationary for any length of time they are sure to give evidence of magnetization, and probably to the inductive action of the earth's poles acting through ages the magnetism of the loadstone is to be attributed.

Preservation and Power of Magnets.—Even steel magnets, freshly magnetized, sometimes gradually fall off in strength, till they reach a point at which their strength remains constant. This is called the *point of saturation*. If a magnet has not been raised to this point, it may lose nothing after magnetization. We may ascertain whether a magnet is at saturation by magnetizing it with a more powerful magnet, and seeing whether it retains more magnetism than before. The saturation-point depends on the material of the magnet itself. When a magnet is above saturation it is soon reduced to it by repeatedly drawing away the armature from it. After reaching this point magnets will keep the same strength for years together, if not subjected to rough usage. It is favorable for the preservation of magnets that they be provided with an armature or keeper. The power of a horseshoe magnet is usually tested by the weight its armature can bear without breaking away from the magnet. Small magnets are much stronger for their size than large ones. The reason of this may be thus indicated. Two magnets of the same size and power, acting separately, support twice the weight that one of them does; but if the two be joined, so as to form one magnet, they do not sustain the double, for the two magnets, being in close proximity, act inductively on each other. The n. pole of the one tends to repel the adjacent magnetism of the contiguous n. pole of the other, and to form by induction a s. pole in its place; the magnets thus weaken one another. Similarly, several magnets made up into a battery have not a force proportionate to their number. Large magnets, in the same way, may be considered as made up of several laminæ, whose mutual interference renders the action of the whole very much less than the sum of the powers of each. The best method of ascertaining the strength of bar-magnets is to cause a magnetic needle to oscillate at a given distance from one of their poles, the axis of the needle and

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the pole of the magnet being in the magnetic meridian. These oscillations observe the law of pendulum motion, so that the force tending to bring the needle to rest is proportionate to the square of the number of oscillations in a stated time.

Action of Magnets on each other.—Coulomb discovered, by the oscillation of the magnetic needle in the presence of magnets in the way above described, that *when magnets are so placed that two adjoining poles may act on each other without the interference of the opposite poles—i.e., when the magnets are large compared with the distance between their centres—the attractive or repulsive force between two magnetic poles varies inversely as the square of the distance between them.* Gauss proved from this theoretically, and exhibited experimentally, that when the distance between the centres of two magnets is large compared with the size of the magnets—i.e., *when the action of both poles come into play—the action of two magnets on each other varies inversely as the cube of the distance between them.* This variation in the strength of the field may be shown either by the oscillation experiments above referred to, or by direct observation of deflections produced at different distances. The action on a magnet in a uniform magnetic field is that of a couple, like that of the hands on a copying-press. There is rotation, but no translation, unless the field falls off in strength from the position of one pole to that of the other.

Effect of Heat on Magnets.—When a magnet is heated to redness it loses permanently every trace of magnetism; iron, also, at red heat, ceases to be attracted by the magnet. At temperatures below red heat the magnet parts with some of its power, the loss increasing with the temperature. The temperatures at which other substances affected by the magnet lose their magnetism differ from that of iron. Cobalt remains magnetic at the highest temperatures, and nickel loses this property at 662° F.

Electric Relations of Magnetism.—Every electric circuit is a closed loop of some form or other. Every such loop bearing a current has round it a magnetic field; and such a single

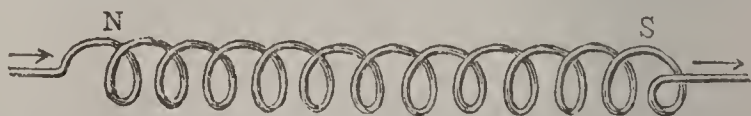


Fig. 6.

loop is equivalent to a thin disk, or shell of any form, cut out of a large bar-magnet, and has a south and a north aspect. The lines of induction pass, say, from the north face out-

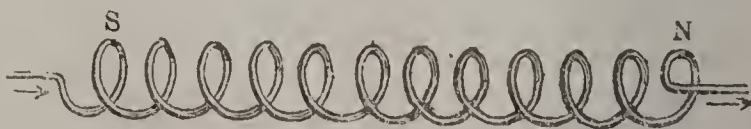


Fig. 7.

ward, filling all space, and return to the south face, threading the loop, so that each line of induction is a closed curve. The lines of induction immediately surrounding the wire are, if the circuit be large enough, circular in

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form. If wire bearing a current be coiled into a helix or solenoid (left-handed, fig. 6; right-handed, fig. 7), the helix acts in respect to bodies external to it exactly in all respects as a bar-magnet would do: the strength of the equivalent magnet being in proportion to the strength of the current passing. The magnetic field surrounding a current-bearing loop or helix is called an Electro-magnetic Field; and it is identical with the field which might be produced by a sufficiently magnetized mass of the same contour: the difference being that, since currents may be made very strong, 'electro-magnetic' fields can be made more intense than any magnetic fields obtainable from steel magnets. These phenomena have led up to Ampère's theory of magnetism.

Ampère's Theory of Magnetism.—Ampère considers that every particle of a magnet has closed currents circulating

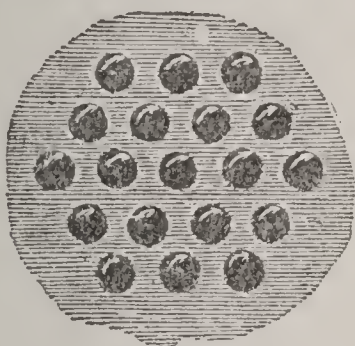


Fig. 8.

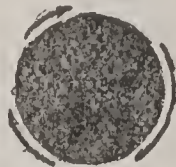


Fig. 9.

about it in the same direction. A section of a magnet according to this theory is shown in fig. 8. All the separate currents in the various particles may, however, be considered to be equivalent to one strong current circulating round the whole (fig. 9). Before magnetization the molecules lie in different directions, so that the effect of the currents is lost, and the effect of induction is to twist the molecules round so as to bring the currents to run in the same direction. The perfection of magnetization would be to render all the various currents parallel to each other. Soft iron, in consequence of its offering less resistance to such a disposition, becomes more powerfully magnetic under induction than steel, in which considerable resistance to this displacement of the molecules exists, and which, when this deformation has once been produced, retains it to a considerable extent, this being the cause of permanent magnetism. This displacement of the molecules upon induction is often accompanied by a tick or by a mechanical twist or an alteration in length and thickness.

Currents may also, it is probable, be induced by a magnetic field in the several molecules of a substance non-magnetic or not; and, as these are so directed as to oppose the magnetic field, we will, if we postulate the absence of resistance to them, arrive in non-magnetic substances at a state of things in which the stresses in the magnetic field and those in the substance acted upon by induction are opposed; and this will give rise to the phenomena, and may provide an explanation, of diamagnetism, which is,

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so far as is known, a property of bodies only found manifested within a magnetic field.

Magnetic Induction inside a Helix.—The interior of a current-bearing helix is a very powerful magnetic field, the most powerful part of the whole electro-magnetic field of the helix, since all the lines of induction are concentrated within it. Soft iron there becomes, instantly on the passage of the current, a powerful temporary magnet, or 'electro-magnet,' as it is called, which falls off in power instantly on the current being stopped; steel becomes permanently magnetized. Fig. 10 shows how the wires may be arranged to magnetize a horse-shoe-bar.

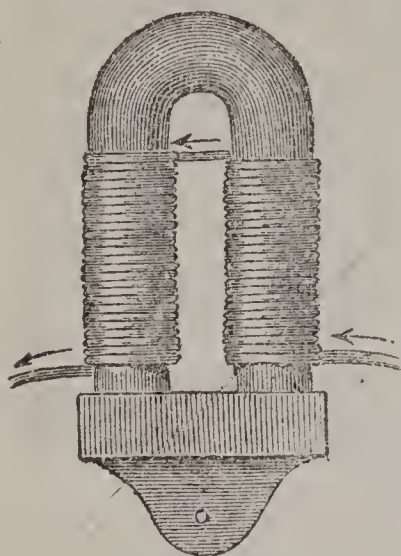


Fig. 10.

The current of the helix, acting on the individual currents within the molecules, places them parallel to itself, and the result is that the soft iron comes to act as a magnet, stronger than any steel magnet. So long as the process of setting the molecules in position is far from being completed—i.e., so long as the iron is not 'saturated'—the strength of the magnetism induced in the core is approximately in proportion to the strength of the current and the number of turns in the coil. Another result is that on introducing a soft iron core into a current-bearing helix the lines of induction, which are due to the induced concert of the soft iron molecular currents, are added to those of the inducing field, so that the whole field is strengthened.

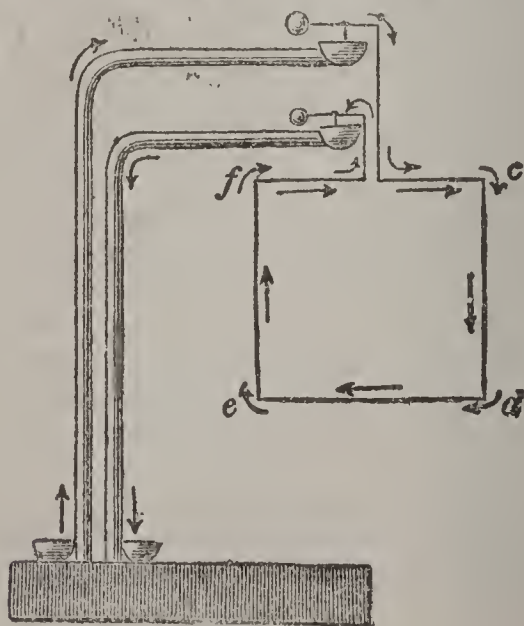


Fig. 11.

Magnetic Attractions and Repulsions of Currents.—The stresses in the magnetic field are such as to make all lines of induction from various sources coincide as far as

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possible in direction; and hence circuits tend to place themselves, as far as possible, coincident with one another in respect of form and parallelism of current. It is not difficult to show that this tendency results in movements the same as those which would be produced if linear currents in the same direction (parallel convergent, or divergent) mutually attracted one another, and currents in opposite directions repelled one another. When a circuit is in part flexible, the flexible part being a wire or even merely a line of discharge through air, it tends either to expand or to contract in area, so that it may come, as near as may be, to meet these conditions; and the result is that similarly-directed currents or parts of the same current move into the closest possible proximity to one another. This is illustrated by fig. 11, in which the course of the current is shown by arrows; the movable part of the circuit, poised on mercury cups, will rotate in a magnetic field so as to tend to make the direction of its own lines of induction coincide with the direction of the lines of induction of the magnetic or electro magnetic field, and thus to make its own contour embrace as many as possible of the lines of induction of the field, if their general trend coincide with its own, or as few as possible if they be opposed; consequently, if a wire in which a current passes downward be placed vertically near *cd*, the lines of induction round that wire and those round *cd* coincide in general direction, and *cd* appears to be attracted by the wire; while if the current pass upward *cd* is repelled, and *ef* attracted. Place now, the wire below and parallel to *de*. If the current passes in the direction *d* to *e* no change takes place, as the attraction cannot show itself; but if the current moves from *e* to *d* the whole turns round till *d* stands where *e* was, and both currents run the same way. If the wire be placed at right angles to *de*, the rectangle turns round and comes to rest when both currents are parallel and in the same direction.

According to Ampère's theory, the earth, being a magnet, has currents in it which are equivalent to currents circulating about it; these must be from e to w., the n. pole of the earth being, in our way of speaking, a s. pole. A magnet, then, will not come to rest till its own lower currents place themselves parallel to and in the direction of the earth's currents. This is shown in fig. 12, where a

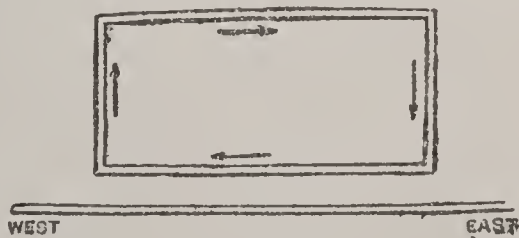


Fig. 12.

section of a rectangular bar-magnet is represented in its position of rest with reference to the earth-current. The upper current, being farther away from the earth-current, is less affected by it, and it is the lower current that determines the position. A magnetic needle, therefore, turns

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toward the north to allow the currents moving below it to place themselves parallel to the earth's current. This also is shown by the current-bearing rectangle in fig. 11, which comes to rest in stable equilibrium, in the absence of any external current, when d and e lie east and west.

The Measurement of Magnetic Data.—This has largely had its terminology evolved with reference to the equivalence of magnetic forces and phenomena to those which would be evinced if 'magnetism' were a kind of matter, positively or negatively attracting and resident in the poles. A *pole of unit strength* is one which attracts or repels another equal pole, at a distance of one centimetre, with a force of one dyne. The *magnetic moment* of a magnet is the strength of either pole multiplied by the distance between the two poles. This can be measured directly. The *intensity of magnetization* of a bar-magnet is the magnetic moment divided by its volume. A *magnetic field of unit strength or intensity* at any particular point is a field in which at that point a unit pole would be pulled upon or repelled with a force of one dyne; and conversely, the intensity of a uniform magnetic field may be measured by finding the mechanical couple acting on a magnetic needle, freely suspended in it. The intensity of induced magnetization produced by putting a long bar of a magnetizable substance in a uniform magnetic field of unit strength measures the *magnetic susceptibility* of that substance. The force within the substance of an induced magnet, due both to the inducing field and to the surrounding magnetized substance, when the inducing field is unity, measures the coefficient of magnetic induction or the *magnetic permeability* of the substance. The *strength of a magnetic disk or shell* is its magnetic moment per unit of area, if this be uniform.

Magnetic Measurement of Electric Data.—Given a magnetic shell of given outline and strength, its action on a magnetic needle placed within its field can be observed; and conversely, from its outline and its deflecting action its strength can be calculated. An electric current of the same contour can have its intensity so regulated as to produce the same magnetic effect as the magnetic shell did on the needle in one position; and if in one, then in every position; and the intensity of that current is said to be, in magnetic measure, numerically the same as the magnetic strength of the equivalent magnetic shell. This is the basis of a system of electric units, called magnetic or electro-magnetic units of electric quantities; and convenient multiples and sub-multiples of these—arrived at by substituting for the centimetre, the gramme, and the second, as the units of length, mass, and time, 1,000,000,000 cm., the $\frac{1}{1000000000}$ part of a gramme and the second as these fundamental units—are in use as the practical units for electrical measurement. These are the *ampère*, the unit of current-intensity; the *ohm*, that of resistance (= the resistance of about 106.2 cm. pure mercury column, 1 sq. mm. in transverse section: defined as that of 106 cm. by the Paris International Electrical Congress); the *volt*, that of potential difference or 'electro

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motive force' (= approximately that of a Daniell cell, in which the liquids are a saturated solution of nitrate of copper and dilute sulphuric acid, 1 acid to 22 water); the *coulomb*, that of electric quantity; the *farad*, that of capacity; and the *quadrant*, that of self-induction. See UNITS, SCIENTIFIC.

Self-induction.—When a current is suddenly started in a coil of wire, the ultimate result is to set up a magnetic field. But, while this is being set up, energy is being absorbed by the field, and the current falls short of its full intensity. Similarly, when the current ceases this energy is restored, and the current seems piled up as if it had momentum of its own like water in a hydraulic ram. The stronger the magnetic field that will be produced—the more lines of induction will thread the coil—the more marked is this effect; and this exaggeration is brought about by multiplying the turns in the coil (keeping down the resistance, if necessary, by increasing the thickness of the wire used), or by inserting a core of soft iron, or both.

Induction of Currents in Magnetic Field.—Lay two circuits in one another's neighborhood. The sudden production or increase of current in the one will produce a brief current in the other in such a sense that there is mechanical repulsion between the induced current and the originating one; the cessation or diminution of the primary current induces in the opposite sense, a brief current in the secondary circuit. These are phenomena of the magnetic field of the primary circuit; and the primary circuit can be replaced by a magnet or electro-magnet, whose approach or strengthening induces brief currents in one sense, and whose recession or weakening induces brief currents in the opposite sense. No current passes in the secondary coil so long as the primary current or magnet remains constant or stationary. For the ways in which this production of a secondary current is utilized, see DYNAMO-ELECTRIC MACHINE: INDUCTION. If we try to move a good conductor—i.e. a knife—in a strong magnetic field the motion is resisted or damped; the production of the induced currents generated by motion in the field absorbs energy.

Rotary Features of Magnetism.—As a simple case, consider the field in the immediate neighborhood of a linear current. The lines of magnetic force run in circles round the wire; a magnet pole tends to be driven in such a sense that, if it be positive or north-seeking, it will travel round an advancing current in the same sense in which the point of a corkscrew travels round the axis of the advancing corkscrew. If a magnet were flexible it would form a coil round the current; and conversely, a flexible current-bearing wire tends to coil round a strong bar-magnet, and currents parallel to bar-magnets tend to rotate round the magnetic axis of the magnet.

Nature of the Magnetic Field.—All the phenomena of the magnetic field are explicable as due to whirlpool currents of electricity in closed vortex-rings, the axes of which are the magnetic lines of induction. The reaction of tendencies to the formation of these vortex-rings from differ-

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ent sources results in the production of local variations of stress in the ether which result in attractive and repellent movements between currents or magnets, or between currents and magnets, or in the production of currents, or of magnetic induction; and the resultant forces are along the axes of the whirls which tend to shorten themselves longitudinally and to spread out laterally. The electric displacements in the whirls are therefore at right angles to the lines of magnetic force. With other dispositions of the magnetic field we have other forms of the lines of force; but they are always closed curves which mark the axes of vortex motions or shears, and which lie wholly in air, or partly in air and partly in metal or other substance.

Electro-magnetic Propagation.—When a disturbance is set up in one place which leads to the formation of a magnetic field, the change from the original condition of the ether to the complex condition which is known as ‘magnetic field’ is marked by a magnetic or *electro-magnetic propagation* of the disturbance; and the theoretical velocity of this propagation has been shown to be about 300,000 kilometres per second, which is practically exactly the same as the speed of the propagation of light. In a linear current the direction of the current is the direction of propagation; the disturbance is propagated in the ether, not in the conductor; and the magnetic and electric displacements are at right angles both to the direction of propagation and to one another. Without a linear conductor to guide the propagation, the disturbance is propagated equally in all directions; and Clerk-Maxwell advanced the proposition that light is a phenomenon of this order, an electro-magnetic phenomenon involving vortical stresses, rather than the mere vibration of an elastic ether. This proposition was strikingly confirmed by the researches of Hertz 1888. He found that by producing waves of electro-magnetic propagation of periodic disturbances he could reproduce with long waves, which he found to travel at the predicted rate, the phenomena of reflection at the surface of a conductor, refraction, polarization, interference, etc., which are manifested by those short and frequent ether-waves which give rise to the phenomena of light and radiant heat; and his results have shown that the plane of magnetic disturbance, at right angles to that of electric disturbance, is the analogue of the plane of polarization, which must be at right angles to the plane of vibration. By Hertz’s researches the science of light has been made a part of the science of electro-magnetism.

See DECLINATION NEEDLE: DIAMAGNETISM: DIPPING-NEEDLE: DYNAMO-ELECTRIC MACHINE. For literature, see ELECTRICITY; and refer to Sir William Thomson’s *Reprint of Papers on Electrostatics and Magnetism* (1872); Von Helmholtz’s *Wissenschaftliche Abhandlungen* (I. 1882); and O. J. Lodge, *Modern Views of Electricity* (1889). For instruments, etc., refer to W. E. Ayrton’s *Practical Electricity* 1886; Jamieson’s *Magnetism and Electricity* (1890).

MAGNETISM, ANIMAL: see HYPNOTISM.

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MAGNETISM, TERRESTRIAL: magnetic properties of the earth as a whole. The globe itself is a magnet: see **MAGNETISM**. In studying the magnetic field associated with the earth we are confined to its surface, and are unable to trace the lines of force throughout their whole

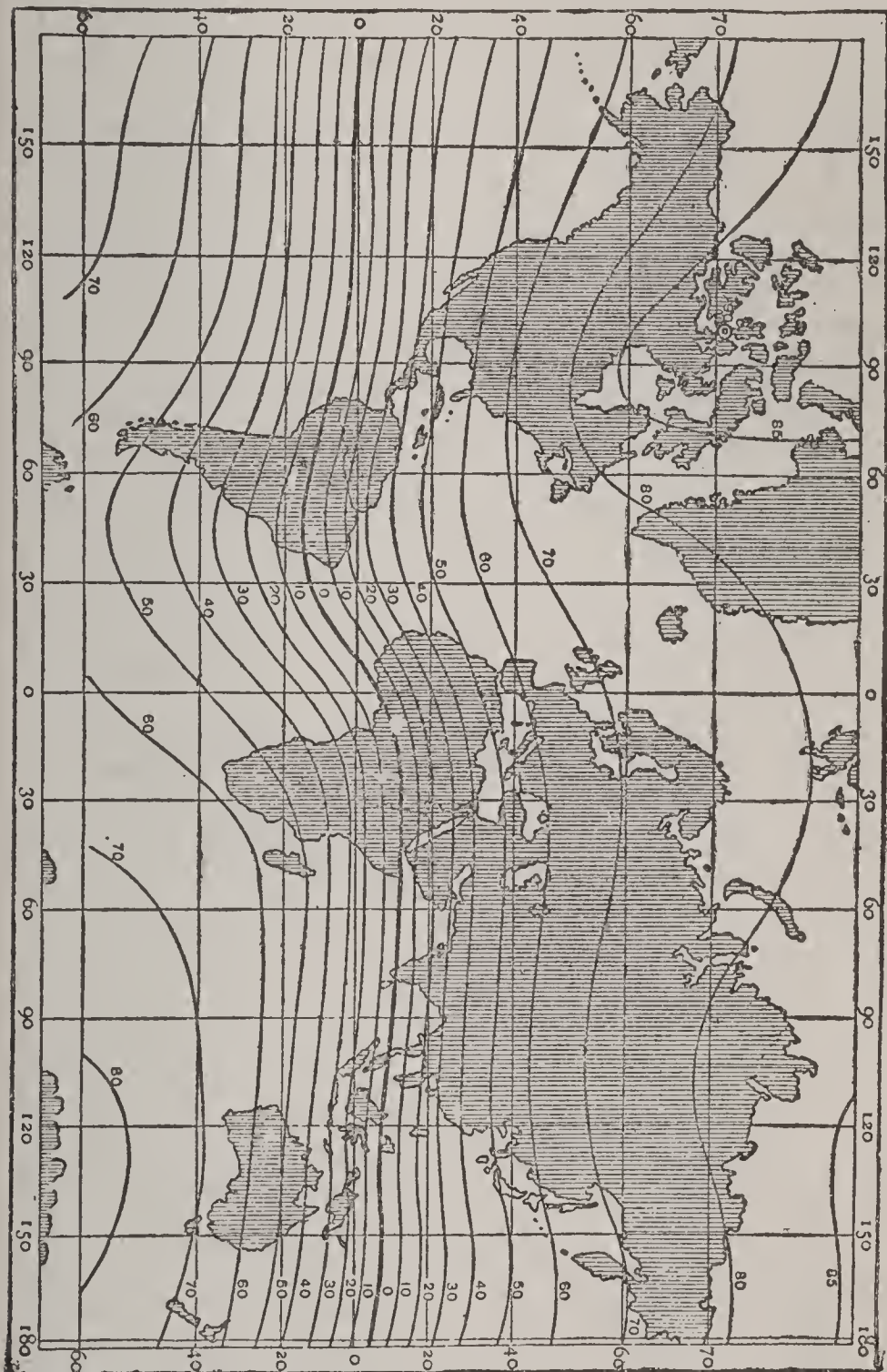


Fig. 1.—Lines of Equal Magnetic Dip, 1885.

length. We believe, however, that these lines of force have the properties of all lines of force associated with magnets. In general they pass by continuously curved paths from regions in the southern hemisphere to regions in the northern hemisphere. The southern hemisphere, therefore, is the seat of what is called northern or positive magnetism.

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The direction of the line of force at any point is given by the direction in which a perfectly free magnet placed there will point (see MAGNETISM). To obtain the direction of the earth's magnetic force we must suspend the magnet accurately by its centre of mass, as in the apparatus known as the Dipping-needle (q.v.). With such an apparatus, let us, beginning at the extreme s. point of Africa, move northward, and study at each successive stage the behavior of the magnet. At first it will be found to make an angle of about 57° with the horizontal, pointing up toward the northwest. This angle of 57° is called the dip, and will steadily diminish as we pass northward, until, a little s.e. of Lake Chad, the magnet will be found to rest perfectly horizontal. Proceeding still northward we shall find the magnet beginning to tilt again, but this time with the north-pointing end downward. As we leave the n. coast of Africa in 20° e. long. the dip will be nearly 45° ; it will be 55° as we enter Turkey, gradually increasing to nearly 77° as we leave the n. coast of Norway. Very similar changes in dip will occur as we pass along any longitude line. The general features are shown in fig. 1, reduced from Neumayer's chart for 1885, as given in the new edition of Berghaus's *Physikalischer Atlas*. Each line is drawn through all places at which the dip has the value indicated by the number attached. The only points requiring particular remark are the position of the line of zero dip, and the position of the point of maximum dip. The line of zero dip is called the magnetic equator. Its non-coincidence with the geographical equator indicates a marked departure of the earth's magnetic condition from the magnetic condition of a uniformly magnetized sphere, whose magnetic axis coincides with the polar axis. The position of maximum dip shown is where the needle points vertical with its north end downward. It is called the magnetic n. pole, and is situated in the n. of Canada, 97° w. long., $70\frac{1}{2}^\circ$ n. lat. There is also a magnetic s. pole, believed to lie somewhere near 150° e. long. and 73° s. lat. The magnetic poles do not, therefore, lie exactly at the

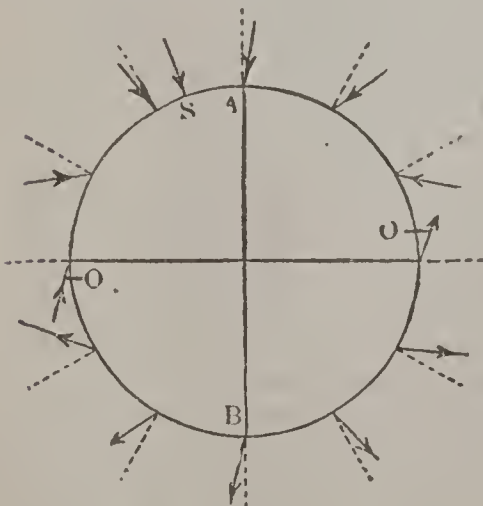


Fig. 2.

extremities of a diameter. It should be noted that the dip is the angle between the line of force at a given locality and the horizontal plane there; that is, the dips in different latitudes are referred to different planes. Fig. 2, which represents the section of the earth along the great circle passing through the geographical and magnetic n. poles, will serve to indicate the approximately relative positions of the lines of force. The direc-

tions of these at latitudes 0° , 30° , and 60° are indicated

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by arrows, the dotted lines giving the directions of the true vertical at the various points. AB is the geographical polar axis, S the 'magnetic north pole'—really analogous to the so-called s. pole of a magnet. OO' are the points of zero dip, where the lines of force will be roughly parallel to the magnetic axis.

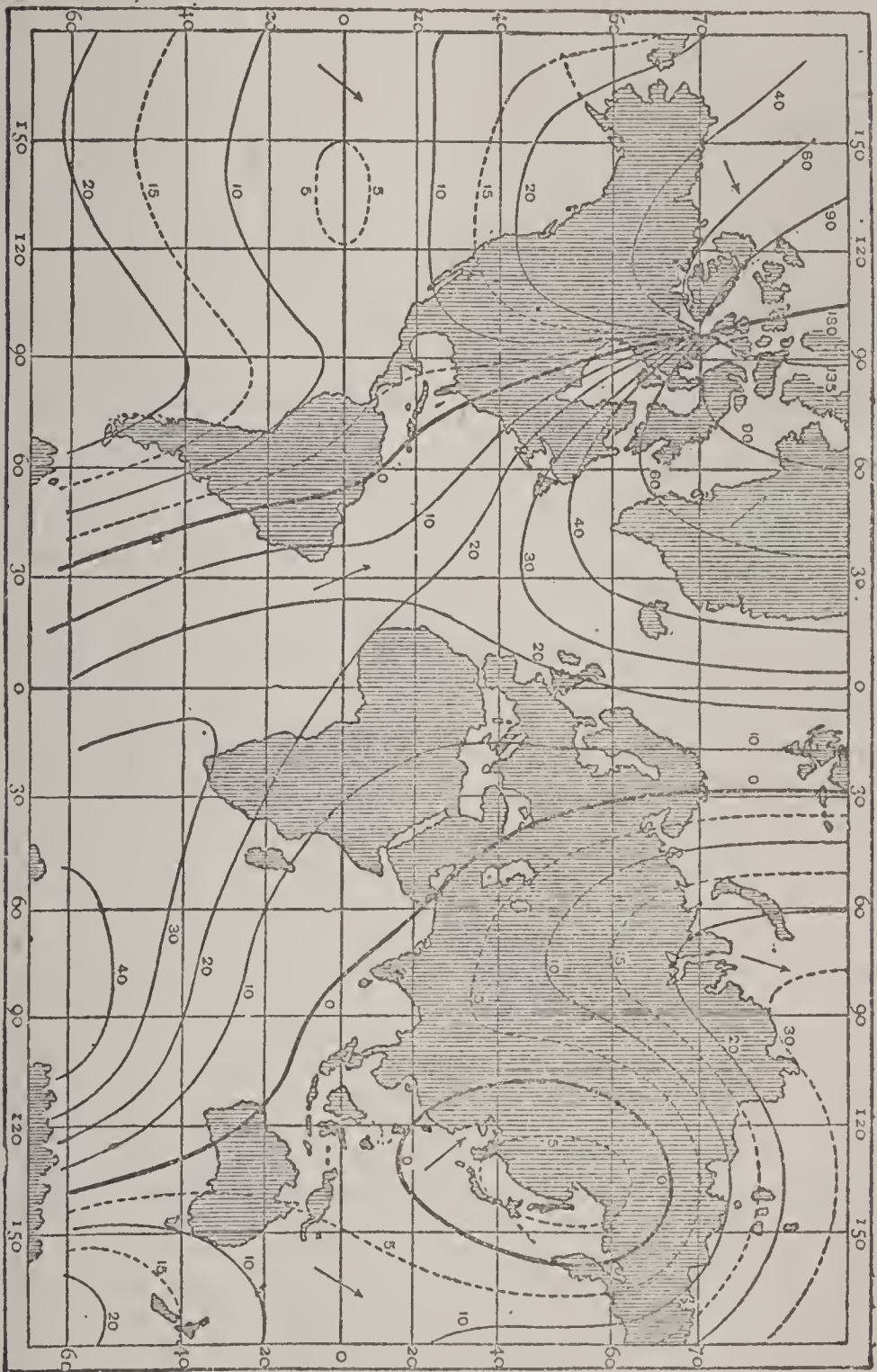


Fig. 3.—Lines of Equal Magnetic Declination, 1885.

Returning again to the southern extremity of Africa, let us consider more fully the position of the magnet hanging freely by its centre of mass. To fix this position we require

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to know not only the dip but also the geographical lie of the vertical plane in which the magnet hangs. This is given by the Declination (q.v.), which may be defined as the angle between the meridian plane and the vertical plane parallel to the magnetic axis of the free-hanging magnet. Practically this angle is determined by a magnet suspended or pivoted so as to lie horizontally, and is what every mariner's compass gives more or less accurately. Near Cape Town the declination is fully 30° west of north ($\text{NNW}\frac{1}{4}\text{W.}$); but as we pass northward it gradually diminishes, until on the Mediterranean shore in 20° long. it becomes only 8° west of north ($\text{N}\frac{1}{4}\text{W.}$). Passing farther north we find it still diminishing, but more slowly, until finally, as we leave the north coast of Norway in the same longitude, it is found to be 6° ($\text{N}\frac{1}{2}\text{W.}$). The general features of the declination are shown in fig. 3. Each isogone or line of equal declination passes through localities at which the declination had the value as marked in 1885. This figure is also reduced from Neumayer's chart. It will be seen at a glance that the surface of the globe is divided broadly into two regions, separated by the agonic lines (marked thick) or lines of no declination. The one region, including the Atlantic with the whole of Africa and a large part of the Indian Ocean, is characterized by a westerly declination; and the other (with an interesting exception) an easterly declination. These are indicated by arrow-heads appropriately directed. The western boundary of the region of westerly declination passes through the magnetic north pole. This line passes through the localities where the magnet points true geographical north. It continues itself northward toward the geographical pole as the isogone of 180° , since any magnet, set between the magnetic pole and the geographical pole, will turn its marked end toward the south instead of toward the north. The eastern boundary of western declination passes northward from Europe till, at the geographical north pole, it meets the short isogone of 180° just mentioned. After its south-easterly sweep across the Indian Ocean this line of zero declination passes through the western portion of Australia, and finally ends at the 'magnetic south pole.' Continuing as the isogone of 180° till it reaches the geographical south pole, it joins with the other boundary line of zero declination. It will be readily seen that the region of western declination is more contracted than the other; but, as if to balance this, there is an isolated region of western declination situated in the midst of the region of eastern declination. This isolated region lies on the east of Asia, and is inclosed in an oval-shaped agonic line (marked with a thick line in the chart). Declination charts for all seas and shores are invaluable to the practical navigator, by whom they are called variation charts. From them he learns at a glance in what direction the magnetic needle points at the place he happens to be in, and can steer his desired course accordingly. For example, in a voyage from England to India by way of Suez, the western declination diminishes rapidly from 17° at Gibraltar to 5° at Suez. Before India is sighted the

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agonic line is crossed, and the declination becomes slightly easterly. Thereafter, on as far as Hong-kong or Torres Strait, the compass points never so much as half a point to the east of north. Hong-kong is just outside the small isolated region of westerly declination, through which the

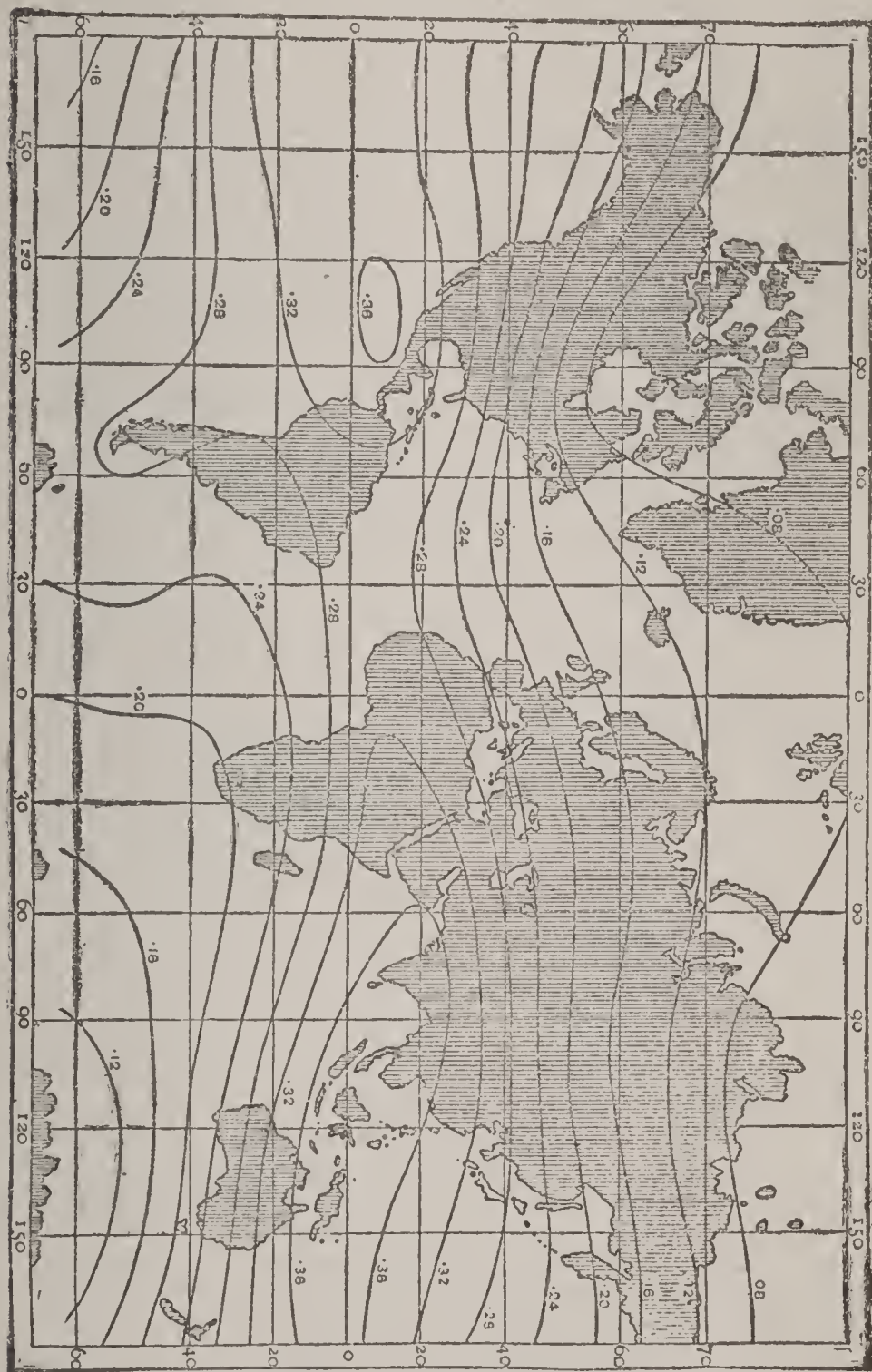


Fig. 4.—Lines of Equal Horizontal Force, 1885.

route to Vancouver passes. As Vancouver is approached, however, the easterly declination rapidly increases to nearly 25° .

The declination and dip completely determine the direction of the line of force. Its strength or intensity still

requires to be known before the magnetic conditions are completely fixed. The total force we may imagine to be determined by measuring the time of oscillation of a dipping-needle of known magnetic moment. Practically, however, it is easier and much more accurate to measure the horizontal component of the total force or intensity of the field. It is consequently more useful to construct a chart showing lines of equal 'Horizontal Force.' Such a chart is shown in fig. 4 (also from Neumayer's chart) each line being drawn through localities at which the horizontal force has the value as marked. The horizontal force must, of course, vanish at the magnetic poles, which we originally defined as the regions where the dip was 90° . From figs. 1 and 4 taken together we may calculate roughly the total magnetic force at any locality, by multiplying the horizontal component by the secant of the angle of dip. Thus, for Edinburgh we have, roughly, $0.165 \times 3 = 0.49$; in Hudson Bay, $0.08 \times 9.5 = 0.76$; in central Africa, where the magnetic equator cuts the 20° longitude line, $0.33 \times 1 = 0.33$. The total force, therefore, increases in a general way as we approach the magnetic poles. Its maximum values, however, are not exactly at these poles, nor do the positions of minimum value lie on the line of dip.

The declination, dip, and horizontal force are commonly called the magnetic elements. They all are subject to variations in time, so that magnetic charts for one epoch will differ somewhat from those for another epoch. For example, comparing the isogonic lines given in fig. 3 with the isogonic lines for 1840, we see that both the long agonic lines have, for the greater part of their lengths, moved westward, and the agonic oval has changed form slightly and moved a little eastward. A line drawn from Nova Scotia to the Cape of Good Hope divides the Atlantic into two regions. In the northeastern region the declination has been diminishing during the last twenty years, while in the southwestern the declination has been increasing. There is some evidence of a periodic variation extending over several centuries. Thus, in 1600 the agonic passed to the *west* of England and through the Cape of Good Hope, the declination in England being about 8° *east* of north. In 1700 the *westerly* declination in England had become 6° or 7° , and that at the Cape about 12° . In 1800 the declinations had increased to 23° or 24° at the two places. All this indicates an eastward motion of the line of zero declination. Since 1818 the westerly declination in England and in western Europe generally has been slowly diminishing, showing that the agonic line had ceased its easterly and begun its present westerly drift. In the charts published by the U. S. Coast and Geodetic Survey very full information is given regarding the westerly drift of the agonic line that passes through America. S. of the Great Lakes its average rate of progress during the last 40 years has been nearly five m. per annum. In 1890 the annual change of declination at places in the neighborhood of the agonic line was about three minutes of arc, westerly increase. At Greenwich, England, the present annual change

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is about seven minutes of arc, westerly decrease. The secular changes in the dip and horizontal force are very slight, and generally take place in opposite directions, so that the change in the total intensity is still smaller.

The solar diurnal variation of the magnetic elements, and especially of the declination, is most easily recognized of all the periodic variations to which the earth's magnetism is subject. In all but tropical regions the declination need!e oscillates markedly about its mean position for the day, attaining its maximum deviation one to two hours after noon. In the n. hemisphere this maximum deviation is to the w. of the mean position; in the s. hemisphere it is to the e. Again, the total range of variation is greater in the summer months than in the winter months. By an elegant development of Gauss's flawless theory of terrestrial magnetism Schuster has shown that the features of the solar diurnal variations of the different magnetic elements indicate causes above the earth's surface as the source of these variations. This accords with Balfour Stewart's hypothesis that the diurnal magnetic changes result from electric currents in the higher regions of the atmosphere. These currents are due to the action of the sun, and are probably associated with the currents of hot air which pass from the equatorial regions both northward and southward. That such electric currents do exist is demonstrated by the existence of the aurora in higher latitudes. Further, distinct connection has been traced between auroral displays and magnetic disturbances of exceptional character (see AURORA BOREALIS). These irregular magnetic disturbances or magnetic storms, as they are called, are more frequent and more pronounced at times of maximum sun-spots; and, according to Loomis, a great magnetic storm is always accompanied by an unusual disturbance on the sun's surface. Again, there is no doubt some connection between certain types of magnetic changes and earth-currents, the latter being particularly strong during magnetic storms; but it is now admitted by all authorities that earth-currents cannot be regarded as an efficient cause of the magnetic disturbances.

In addition to the well-marked solar-diurnal variation of the magnetic elements, there is also a lunar-diurnal variation, which has been specially studied by Broun and Chambers. These and other phenomena of terrestrial magnetism show that the earth is magnetically sensitive to cosmic influences. These influences may be directly magnetic; or, as is more probable in the case of the solar-diurnal variations, they may give rise to meteorological changes involving electric and magnetic actions. As to the ultimate origin of the earth's magnetism as a whole it is not possible, at present, to formulate any satisfactory hypothesis. The rotation of the earth, so important a factor in the broad meteorological features that exist over the earth's surface, is the only dynamic polarity that can be compared to the magnetic polarity. According to the nebular hypothesis, the earth's rotation is a part of a grand circulatory motion of the solar system. So may the earth's mag-

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netism be a part of the general magnetic conditions of the same system. If such a view is too vague for acceptance, the only hypothesis which seems to meet the case is that suggested by Balfour Stewart, who traces the magnetic condition of the earth to the terrestrial meteorological system, as modified by the earth's rotation, acting cumulatively through the ages.

MAGNETO ELECTRIC MACHINE: see **DYNAMO-ELECTRIC MACHINE.**

MAGNETOMETER: in general, any instrument for measuring magnetic force, or for comparing one magnetic force with another. A freely-suspended magnet, whereby the strength and direction of the lines of force in a magnetic field may be ascertained by observing the position assumed by a freely-suspended magnet and also its rate of oscillation and the amount to which it is deflected when under the influence of a second magnet, is the essential feature of all magnetometric instruments. The peculiar importance to us of the earth's magnetic field has, however, led to the construction of instruments of precision, to which the name is specially applied. In a magnetic observatory the self-registering magnetometers or magnetographs form an extremely important set of instruments. By these the quick changes in the intensity of the earth's magnetic field and in the declination are registered by photographic means. The essential feature of the method is the reflection of a beam of light from a mirror attached to a magnet which is suspended or pivoted so as to be sensitive to changes in the element being measured.

MAGNETOMOTOR, n. *măg'nět-ō-mō'tēr* [Gr. *magnēs*, the loadstone; L. *motor*, a mover]: a voltaic series of two or more large plates, which produces a great quantity of electricity of low tension, adapted for electro-magnetic purposes.

MAGNIFICAT, *măg-nĩf'ĩ-kăt*: a musical composition in the evening service in the Rom. Cath. Church, also of the Lutheran and English Churches. The words are taken from Luke i. 46-55, containing the 'Song of the Virgin Mary,' which, in the Vulgate, begins with *Magnificat*. In the Rom. Cath. Church, the M. is a grand hymn, powerful in melody and harmony, mixed with pompous fugues, and with full instrumentation. In modern times, there have been few attempts in the Rom. Cath. service to supersede the older music of the M. (by Palestrina); but in the service of the Church of England, and of the Prot. Episc. Church in the United States, where the music is of less elevated character, new compositions are frequently written for the M., by composers strictly of the English school.

MAGNIFICENT, a. *măg-nĩf'ĩ-sěnt* [L. *magnificens* or *magnificen'tem*, doing great things, magnificent—from L. *magnus*, great; *faciō*, I make]: grand in appearance; pompous; fond of splendor; having the quality of grandeur or excellence. **MAGNIFICENTLY**, ad. -*lĩ*. **MAGNIFICENCE**, n. -*ĩ-sěns* [F.—L.]: grandeur of appearance;

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splendor. MAGNIF'ICO, n. -ĩ-kō [It.]: a grandee or noble of Venice. MAGNIFY, v. *măg'nĩ-fĩ* [L. *fĩō*, I am made]: to increase the apparent size of a body; to praise or extol highly; to exaggerate; to amplify; to raise in pride or pretensions. MAG'NIFYING, imp.: ADJ. enlarging apparent size; extolling. MAG'NIFIED, pp. *-fĩd*. MAG'NIFIER, n. *-fĩ-ér*, one who magnifies; a glass or lens which increases the magnitude of a body to the eye. MAGNIFYING GLASS: see MICROSCOPE. MAG'NIFI'ABLE, a. *-fĩ'-ă-bl*, that may be magnified. MAGNIFICAT, n. *măg-nĩf'ĩ-kăt* [L. *magnĩficat*, magnifies, extols]: the inspired Hymn of the Blessed Virgin Mary (Luke i. 46-55), so named from the commencing word in the Latin Vulgate (see MAGNIFICAT, above).—SYN. of 'magnificent': grand; great; sublime; majestic; noble; imposing; stately; splendid; august; superb;—of 'magnify': to exalt; extol; praise; augment; enlarge.

MAGNILOQUENT, a. *măg-nĩl'ō-kvēnt* [L. *magnus*, great; *loquens* or *loquen'tem*, speaking]: pompous in words or style; expressing lofty pretensions. MAGNIL'OQUENCE, n. *-kvěns*, a lofty inflated manner of speaking. MAGNIL'OQUENTLY, ad. *-lĩ*.

MAGNITUDE, n. *măg'nĩ-tũd* [L. *magnitũdĩnem*, greatness—from *magnus*, great: It. *magnitudine*]: bulk; size; extent of dimensions or parts; greatness; importance.

MAGNOLIA, *măg-nō'lĩ-a*: seaside resort on Cape Ann in Mass., on the point w. of the entrance to Gloucester Harbor, abt. 25 m. in a straight line n.e. of Boston. It is 4 m. from the centre of Gloucester, being partly in that town, partly in Manchester. It combines charming woodland drives with impressive cliffs on a bold ocean shore. It has good hotels and many fine cottages. It is connected with Boston by the Cape Ann Branch of the Boston and Maine railroad.

MAGNOLIA: genus of beautiful trees, typical genus of the nat. ord. *Magnoliaceæ*, having a calyx of three sepals, a corolla of 6-12 petals, and carpels in spikes arranged in cones, and opening at the dorsal suture. There are about 14 species, natives chiefly of N. America, the Himalaya Mountains, China, and Japan. The flowers are large and solitary, the leaves large. The wood is in general soft, spongy, and of little value. *M. grandiflora*, sometimes called the BIG LAUREL, has white flowers sometimes 12 inches in diameter. It is a lofty and magnificent evergreen tree, conspicuous at a great distance, found in the southern United States from N. Car. to the Gulf of Mexico. It thrives as an ornamental tree in s. England, but in Scotland requires a wall and some protection in winter.—*M. tripetala* is found on the Alleghany Mountains, and extends as far n. as lat. 43°. From the radiated manner in which its leaves are disposed at the extremities of the branches, it has received the name of UMBRELLA TREE. It has very large white flowers. It is one of the species most frequently cultivated in Britain.—*M. acuminata* inhabits the same district. and is a lofty

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tree with greenish-yellow flowers, not so much admired as those of some of its congeners.—*M. glauca*, native of Penn., Va., and the Carolinas, is known by the names of WHITE BAY, BEAVERWOOD, and SWAMP SASSAFRAS. It is a tree or shrub, 15–20 ft. in height, with very beautiful and fragrant white flowers: its bark is used as a substitute for Peruvian Bark.—The YULAN, or Chinese *M. (M. Yulan* or *conspicua*), has been much cultivated in China for more than twelve hundred years, on account of its great profusion of beautiful and fragrant white flowers. It is one of the finest ornamental trees, and thrives in s. England. It is a deciduous tree, and the flowers expand before the development of the leaves.—*M. excelsa*, one of the finest species known, is a predominant tree in parts of the Himalaya Mountains, at an elevation of 7,000–8,000 ft., the mountains when it is in blossom appearing as sprinkled with snow.—*M. Campbellii*, another native of the same region, produces great rose-colored flowers, and is described by Dr. Hooker as the most superb of the genus.—Allied to the genus *M.* is *Michelia*, some of the species of which are among the most valuable timber trees of Nepaul, and very ornamental. The bark of some is used medicinally, and the fragrant flowers of a species called Champac are the delight of the people of Hindustan. *Manglietia* is another closely allied genus, to which belong valuable timber trees of Nepaul and of the Indian islands.—The nat. ord. *Magnoliaceæ* is closely allied to *Ranunculaceæ*, differing chiefly in the arborescent habit, and in the large stipules which envelop the young leaves before they open, but soon fall off. The leaves are simple. Aromatic properties are prevalent. To this order belong the *Tulip Tree*, *Star Anise*, and *Winter's Bark*.

MAGNOLIACEÆ, n. *măg-nō'li-ă'sē-ē* [after Pierre *Magnol*, prof. of medicine at Montpellier, France—died 1715]: the Magnolia family, an order of splendid trees and shrubs, bearing large showy flowers with fine glossy leaves, and possessing bitter, tonic, and often aromatic properties. MAGNOLIA, n. *măg-nō'li-ă*, genus of trees (see above).

MAGNUM, n. *măg'nŭm* [L. *magnus* or *magnum*, great]: a large wine-bottle, which holds double the quantity of an ordinary one. MAGNUM BONUM, *bō'nŭm* [L. *magnum*, great; *bonum*, good]: a plum so called; an epithet denoting excellence in the highest degree.

MAGNUSSEN, *măg'nŭs-èn*, FINN: Scandinavian scholar and archæologist: 1781–1847; b. Skabholt, in Iceland, where his family, both on his mother's and on his father's side, had for generations been distinguished for learning and integrity. In 1797, M. entered the Univ. of Copenhagen to study law. After practicing this profession some years in Iceland, he returned 1812 to Copenhagen, and applied himself to his favorite archæological studies. In 1815, he obtained a chair of literature in the university. Among his earlier noteworthy works are his papers on

the Aboriginal Home and Earliest Migrations of the Caucasian Races (1818); contributions to northern archæology (1820); the indices, glossaries, and lexicon which he compiled for the elucidation of the 2d and 3d of the Arne-Magnussen editions of the Eddas (1818 and 28); comprehensive translation of the Elder Edda (*Aldre Edda, oversat og forklaret*, Kopen. 1824); and exposition of the same work (*Edda læren og dens Opfindelse*, Kop. 1824). Among his later works, *Runamo og Runerne* (Kop. 1841) has given rise to angry discussion; and although many of his interpretations of assumed runes have been proved untenable, his learning and acumen have thrown great light on this branch of archæology, in regard both to N. American and to ancient northern remains. In conjunction with Rafn, M. elucidated the history and antiquities of Greenland in an able work (*Grönland's Historiske Mindesmerker*, Kop. 1838-42); and he subsequently prosecuted a similar course of inquiry in regard to Russia in *Antiquités Russes* (Cop. 1850-52). M. annotated nearly all the most important remains of old northern literature. During his latter years, M. sat in the Danish landthing as deputy for Iceland and the Farøe Isles. At his death, he held the office of *Geheimarchivar* in the Royal Chamber of Archives.

MAGO, *mā'gō*: common Carthaginian name; appearing in history as applied to no less than 14 different persons; of whom the most distinguished is M., son of Hamilcar Barca (q.v.) and a younger brother of Hannibal (q.v.) and Hasdrubal (q.v.).

MAG'OT: see BARBARY APE.

MAGPIE, n. *māg'pī*, or PIE [L. *pica*; It. *pica*; F. *pie*, a chatterer, a pie, and the familiar *mag*, for *Margaret*]: chattering, party-colored bird of the crow kind. *Note*.—Said also to be from Gael. *mag*, to mock; *pighe*, a bird or pie—see Dr. C. Mackay. M. is a genus of birds of family *Corvidæ* (q.v.), differing from the true crows chiefly in the long and graduated tail. They are also of smaller size and brighter colors, the most prevalent color being blue with bars of black and white.—The only British species is the COMMON M. (*P. caudata*), the *Kitta* of the Greeks, and *Pica* of the Romans; formerly a common bird in Britain, and almost all parts of Europe; its bright but not finely mingled colors—black, white, and blue—making it always conspicuous, and its dissonant harsh cry equally attracting attention. The M. is seen generally in pairs throughout the year. It builds its nest in high trees; the outside being formed of thorny sticks strongly interwoven, the inside plastered with earth and lined with fibres and dry grass; the top a dome, and one aperture left on the side for the parent bird. The M. formerly familiar around farmsteads, a merry and saucy bird, has become suspicious and shy, having for some generations been persecuted as a pilferer. It is vigilant in an extreme degree, notable for cunning, both in eluding enemies, and in seeking its own food, as to which it

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may be said that nothing comes amiss to it, grain being not unacceptable, but eggs or carrion preferable. Though in Britain it is persecuted, in Norway it is encouraged



Common Magpie (*Pica caudata*).

in the neighborhood of human habitations, and consequently often makes its nest under the eaves of churches and other buildings. The M. is easily tamed, becomes impudently familiar, and learns to articulate a few words. Both in a wild and tame state, it has a propensity to seize and carry off bright or glittering articles. It abounds in most parts of Europe and N. Asia, and in the middle and w. parts of N. America, though rare in America near the Atlantic.—The other species are natives mostly of e. Asia.

MAGYAR, n. *măd'yâr*: a name for a Hungarian, or one of the dominant class in Hungary (q.v.).

MAHÂBHÂRATA, n. *mâ'hâ-bâ'râ-tâ* [from Sanskrit *mahat*—changed to *mahâ*—great, and *Bhârata*]: name of one of the two great epic poems of ancient India. (For the other, see RÂMÂYAN'A.) As its main story relates to the contest between two rival families, both descendants of a king, Bharata, the word M. probably implies 'the great history of the descendants of Bharata;' for another explanation of the word, which connects it with *bhâra*, weight, was obviously invented merely to convey an idea of the enormous extent of this poem. According to this explanation, it would mean the 'very weighty (poem),' because, 'when weighed, it was found to be heavier than all the four Vedas together with their mystical writings.' However devoid of grammatical value this popular account of the word M. may be, it does not exaggerate the bulk of this epos, which, in its present condition, consists of more than 100,000 verses, each containing 32 syllables; while, if a tradition, reported in the introduction to the work itself, could be trusted, it was formerly known in other recensions of still greater extent. In its actual shape, it is divided into 18 parvans or books, the *Harivans'a* (q.v.) being considered a supplementary part of it. That this huge composition was the work not of one individual, but of successive ages, clearly appears from the multifariousness of its contents, from the difference of style in its various parts, and even from the contradictions which it presents. Hindu tradition ascribes it to *Vyâsa*; but as *Vyâsa* means 'the distributor or arranger,' and as the same individual is also the reputed compiler of the Vedas, Purânas, and several other works, it is obvious that no historical value can be assigned to this generic name. The contents of the M. may be distinguished into the leading story and the episodical matter connected with it. The former is probably founded on real events in the oldest history of India, though in the epic narrative it is difficult to disentangle the reality from the fiction. The story comprises the contest of the celebrated families called the Kauravas and Pân'd'avas, ending in the victory of the latter, and in the establishment of their rule over n. India. Kuru, descendant of Bharata, had two sons, Dhr'itarâsh'tra and Pân'd'u. The sons of the former, commonly called the *Kauravas*, were a hundred in number, the eldest of them being Duryodhana; those of Pân'd'u—the *Pân'd'avas*—were five, Yudhish'thira, Bhîma, Arjuna, and the twins Nakula and Sahadeva. Pân'd'u having resigned his throne, Dhr'itarâsh'tra, though blind, assumed the government, and ultimately divided his kingdom between his sons and the sons of Pân'd'u. The former, however, coveting the territory allotted to the Pân'd'u princes, endeavored to get possession of it. A game of dice was the means by which they bound over their cousins to relinquish their kingdom, promising, however, to restore it to them if they passed 12 years in the forests, and a 13th year in such disguises as to escape detection. This

promise was faithfully kept by the Pân'd'avas; but the term of their banishment having expired, the Kuru princes refused to redeem their word. A war ensued, ending in the complete destruction of the Kauravas. These are the meagre outlines of the leading story of the M., where, as may be inferred, Duryodhana and his brothers are pictured as the type of all conceivable wickedness, and the Pân'd'u princes as paragons of virtue and heroism. That the latter are the incarnations of sundry deities—that the gods take an active part in the development of the plot, in short, that Hindu mythology is always interwoven with these stirring events of semi-historical Hindu antiquity, will be a fact recognized on even a slight acquaintance with Hindu poetry. It is necessary, however, to observe that out of the 100,000 verses, barely a fourth part is given to this narrative; all the rest is episodic. The matter thus incidentally linked with the main story, may be distributed under three principal heads, passing over such minor additions as fables, genealogical lists, geographical enumerations, and the like. One category of such episodes comprises narratives relating to the ancient or mythical history of India, e.g., the episodes of Nala and S'akuntalâ; a second, more strictly mythological, comprises cosmogony and theogony; a third is didactic or dogmatic—it refers to law, religion, morals, and philosophy, as in the case of the celebrated Bhagavadgîtâ, and the principal portions of the 12th and 13th books. By means of this episodic matter, which at various periods, and often without regard to consistency, was superadded to the original structure of the work, the M. gradually became a collection of all that was needed to be known by an educated Hindu; in fact, it became the encyclopedia of India. 'There is no narrative on earth,' the M. says of itself, 'that is not founded on this epos. . . . The twice-born, though knowing the four Vedas and their supplementary sciences, has no wisdom unless he knows this great epos. . . . It is the great manual of all that is moral, useful, and agreeable.' Yet it should be noticed that the Brahmanic authors of the great epos intended it especially as an encyclopedia for the Kshatriya or military caste; for it is chiefly the history, the interests, the religion, and the duties of the second caste which are taught in it, always, of course, with a view of establishing the superiority of the Brahmanic caste. Sectarian religion is for this reason not emphasized in the M., though the later sectarian works (see PURÂNA) have largely drawn, for their purposes, on the mythological material afforded them by the great epic work. The text of the M. was published in Calcutta in four quarto vols. (1834-39), another at Bombay, 1863. The best researches on the M. are those by Lassen, especially in *Indische Alterthumskunde*. A sort of analysis of the leading story of the M. is given in Eichhoff's *Poésie Héroïque des Indiens* (Paris 1860), and by Prof. Monier Williams (*Indian Epic Poetry*, 1863). Fauche's French

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translation of the M. (10 vols. 1863-72) is imperfect. Many episodes (as the BHAGAVAD-GITA, q.v.) have been separately published, as by Pavie, Foucaux, Bopp, and others. See Talboys Wheeler's *History of India* (1867).

MAHÂDEVA, *ma-hâ-dâ'va* ('the great god'): one of the usual names of the Hindu god S'iva. (His consort, Durgâ, is similarly styled *Mahâdevî*, 'the great goddess.') In Buddhistic history, M., who lived 200 years after the death of the Buddha S'âkyamuni (the Buddha is supposed to have died after the beginning of the 6th c. B.C.), is a renowned teacher who caused a schism in the Buddhistic Church. His adversaries accuse him of every possible crime, but as he is ranked among the Arhats, his eminence cannot be doubted. The school founded by him is called *Pûrvas'aila*. See W. Wassiljew, *Der Buddhismus*; Oldenberg's *Buddha* (transl. 1882).

MAHAFFY, *ma-hă'fġ*, JOHN PENTLAND, D.D.: educator: b. Chapponnaire, Lake of Geneva, Switzerland, 1839, Feb. 26. He graduated at Trinity College, Dublin, 1859; gained a fellowship in competition 1864; was appointed precentor of the chapel 1867; prof. of anc. history 1871 (which office he still holds, 1890); Donnellan lecturer 1873; and received his degree 1886. His numerous publications include a translation of Kuno Fischer's *Commentary on Kant* (1866); *Twelve Lectures on Primitive Civilization* (1868); *Prolegomena to Ancient History* (1871); *Greek Social Life from Homer to Menander* (1874, 80); *Greek Antiquities* (1876); *Rambles and Studies in Greece* (1876, 78); *Greek Education* (1879); *A History of Classical Greek Literature*, 2 vols. (1880, 83); *The Decay of Modern Preaching* (1882); and *The Story of Alexander's Empire* (1886).

MAHÂKÂS'YAPA, *ma-hâ-kâs'ya-pa*: one of the most renowned disciples of the Buddha S'âkyamuni. He arranged metaphysically the portion of the sacred writings of the Buddhists called Abhidharma; and tradition ascribes to him also the origin of the *Sthavira* division of the *Vaibhâshika* school of the Buddhistic philosophy. Many legends are connected with his life.—See E. Burnouf, *Introduction à l'Histoire du Bouddhisme Indien* (Paris 1844), and his posthumous work, *Le Lotus de la Bonne Loi* (Paris 1852).

MAHANNUDDY, *mâ-hâ-nŭd'di* (accurately, MAHAN-ADI): river of India, rising on the s.w. border of the presidency of Bengal, lat. 20° 20' n., long. 82° e. After an eastward course of 520 m., 300 m. of which are navigable, having divided into several branches at the town of Cuttack, which forms the head of its delta, it flows e. and s.e. through the dist. of Cuttack, and falls by several mouths into the Bay of Bengal.

MAHANÓY CITY, *mâ-ha-noy'*: city in Schuylkill co., Penn.; on the Philadelphia and Reading and the Lehigh Valley railroads; 10 m. n.e. of Pottsville, 56 m. n.e. of Harrisburg, 80 m. n.w. of Philadelphia; 1,211 ft. above

sea-level. It is in a large and rich anthracite coal region; has gas and water works, 2 national banks (cap. \$225,000), 14 churches, public library, excellent public and private schools, iron foundry, and 2 newspapers. M. C. was settled 1859. Pop. (1890) 11,286; (1900) 13,504.

MAHARAJAH, n. *mâ'hâ-râ'jâ* [Skr. *maha*, great; *rajah*, a king]: a Hindu sovereign prince.

MAHARMAH, n. *mă-hâr'mă*: a muslin wrapper worn over the head, and across the mouth and chin, by Turkish and Armenian women when they go abroad.

MAHÂSÂNGHIKA: one of the two great divisions of the Buddhistic Church which arose about 200 years after the death of the Buddha S'âkyamuni, or about 343, caused, as it seems, by the schism of Mahâdeva (q.v.). For the other division, see STHAVIRA. Out of the M. school arose numerous sects.

MAHATMA, n. *mâ-hât'mâ* [Sans. great-souled one]: an adept in theosophy or occultism. In the first stage the *Yogi* (mystic) begins to learn and battles with his animal nature; in the second stage still advances; and in the third the M. overcomes the material, so that neither earth, air, fire, nor water can harm him. He can project his 'astral body' far from the material form, and appear to others at almost limitless distances. In the fourth stage, the M. loses all personality and separate consciousness, is free from sorrow and illusion, and knows the absolute truth in its unveiled splendor.—See THEOSOPHY.

MAHÂVANSA: title of two celebrated works written in Pâli, relating to the history of Lankâ, or Ceylon (q.v.), from its earliest period till the reign of Mahâsena, who died A.D. 302. The older work was composed probably by monks of the convent Uttaravihâra at Anurâdhâpura, cap. of Ceylon. Its date is uncertain; but it apparently preceded the reign of Dhâtusena (A.D. 459–477), as that monarch ordered it to be read in public, a circumstance which seems to prove its celebrity already at his time.—The later work of the same name is an improved edition and continuation of the former. Its author was *Mahânâma*. See Lassen, *Indische Alterthumskunde* (1852; 2d ed. 1875).

MAHÂVÎRA (literally 'great hero'), called also *Vîra* and *Vardhamâna*: the 24th or last Jina, or deified saint, of the Jainas (q.v.), described as of golden complexion, and having a lion for his symbol. His legendary history is given in the *Kalpa-Sûtra* (q.v.) and the *Mahavîra-Charitra*, two works held in great authority by the Jainas. According to these works, M.'s first birth occurred at a period infinitely remote; it was as Nayasâra, head man of a village, that he first appeared in the country of Vijaya, subject to S'atrumardana. He was born next as *Marîchi*, the grandson of the first Jaina saint *R'ishabha*; he then came to the world of Brahmâ, was reborn as a worldly-minded Brâhman'a, and after several other births—each being separated from the other

by an interval spent in one of the Jaina heavens, and each period of life extending to many hundreds of thousands of years—he quitted the state of a deity to obtain immortality as a saint, and was incarnate toward the close of the fourth age (now past), when 75 years and 8½ months of it remained. After he was 30 years of age, he renounced worldly pursuits, and departed, amid the applauses of gods and men, to practice austerities. Finally, he became an Arhat or Jina; and at the age of 72 years, the period of his liberation having arrived, ‘he resigned his breath,’ and his body was burned by Indra and other deities, who divided among them such parts as were not destroyed by the flames, as the teeth and bones, which they preserved as relics; the ashes of the pile were distributed among the assistants: the gods erected a splendid monument on the spot, and then returned to their respective heavens. The period of these events is not stated, but judging from some of the circumstances narrated, the last Jina would have expired about B.C. 500: other authorities make the date about a century and a half earlier. The works above referred to state, with considerable detail, the conversions worked by Mahāvīra. Among the pupils were *Indrabhūti* (called also Gautama, and for this reason, but erroneously, considered as the same with the founder of the Buddhist religion), *Agnibhūti*, *Vāyubhūti*—all three sons of Vasubhūti, a Brâhman’a of the Gotama tribe, and others. These converts to Jaina principles are mostly made in the same manner: each comes to the saint prepared to overwhelm him with shame, when he salutes them mildly, and, as the Jainas hold, solves their metaphysical or religious doubts. Thus, Indrabhūti doubts whether there be a living principle or not; Vāyubhūti doubts if life be not body; Man’dita has not made up his mind on the subjects of bondage and liberation; Achalabhrâtrī is sceptical as to the distinction between vice and virtue; and so on. M. removes all their difficulties, and by teaching them the Jaina truth, converts them to the doctrine of his sect. For a summary account of the life of this saint, see H. T. Colebrooke’s *Miscellaneous Essays*, II. 213, ff.; H. H. Wilson’s works, I. 291, ff.

MAHDI, *El, ʿel mâ’dē* [Arab. the one who is guided rightly]: designation among Mohammedans of a leader, divinely commissioned to appear suddenly for the establishment of Islam by the extermination of all unbelievers. It was originally the title assumed by the 3d caliph of the house of Abbas (abt. 785); since then it has been claimed by numerous pretenders in various parts of the Mohammedan world. Notable among these is the last Imam of the house of ‘Ali. ‘Ali’s son Mohammed is the one concerning whom first—it is said—the notion spread after his death, that he was only hidden and would come forth to lead the armies of the faithful: the Shiites generally however attach this superstition to the 12th Imam as to their Messiah; he mysteriously disappeared 879. The most famous pretender to the title

MAHDIAN—MAHMUD II.

M. was the first Fatimite caliph in n. Africa (d. 934). The Almohades (q.v.) were led by a pretended Mahdi. During 1880-90, three M.'s have been prominent, one in Turkey, two in Africa. Of these, Sheikh Mohammed-Ahmed, of Dongola, in Sudan, is best known, having antagonized the English movements in that region (see SUDAN). He was b. abt. 1845 in Dongola; apprenticed to a ship-builder; ran away and became a begging Dervish at Khartum, and later on an island in the White Nile, living in a pit, and attracting by the fame of his holiness thousands whose offerings made him rich. 1881, May, he announced himself as El Madhi, commissioned of God to restore a pure Islamism, overcome all nations, and reform society throughout the world. He succeeded in creating a most mischievous excitement in all the region of the Upper Nile; but was utterly routed by Gen. Kitchener at Omdurman, near Khartoum, 1898.

MAHDIAN, n. *mâ'dī-an*, or MAHDIST, *mâ'dist*: follower or adherent of the Mahdi.

MAHIM, *mâ-hēm'*: town of the island of Bombay, seven m. n. of the city of Bombay, to which it is joined by railway. It is on the south side of the channel separating the island from Salsette, and at the point where they are connected by a road running partly on arches of masonry, partly on a causeway. The passage is commanded by a fort. The town is ill built, and inhabited chiefly by Christians of Portuguese descent, who have here a church and other relics of their former prosperity. The inhabitants are chiefly employed in fishing, the place being famous for its oysters. Pop. 9,000.

MAHL-STICK, n. *mawl'stīk* [Ger. *maler-stock*—from *maler*, a painter; *stock*, stick]: the stick used by painters to serve as a rest to the right hand while painting; also written MAUL-STICK.

MAHMOOD' (or MAHMŪD') of GHIZNI (ABUL-KASIM-YEMINED-DAULAH), Sultan of Persia: see GHIZNEVIDES.

MAHMUD II., *mâ-môd'*, Sultan of Turkey: 1785, July 20—1839, July 1 (reigned 1808-39); younger son of Sultan Abdul-Hamed. On the deposition of his brother, Mustafa IV., by Bairaktar, Pasha of Ruschuk, M. was raised to the throne. Bairaktar became his grand vizier, and vigorously aided him in his attempts to reform the Turkish army. But the Janizaries rose in rebellion, and the murder of the vizier temporarily checked military reforms. M. also was attacked by the rebels, but he secured his life and the throne by the destruction of all the other members of the royal house of Osman. The war with Russia, of three years' duration, completely prostrated the strength of Turkey: peace was concluded at Bucharest (q.v.). The daring and energetic M. then applied himself to the subjugation of the semi-independent pashas of the outlying provinces, and to reforms in all departments of the government. The rebellion of the Wahabis was crushed through the instrumentality of Ibrahim Pasha 1818; and Ali Pasha (q.v.),

the 'Lion of Janina,' was overthrown 1822. Greece revolted 1821, and its independence was secured by the battle of Navarino 1827, but it was not recognized as a separate kingdom by Turkey till 1830, Apr. During the Greek revolution, M. had been secretly maturing his plans of military reform, and 1826 June, the success of his schemes was crowned by the destruction of the Janizaries (q.v.). The consequent confusion in Turkey was immediately availed of by Russia for obtaining fresh concessions. The disastrous termination of the succeeding war with Russia (1828-9), did not interfere with his projects of reform. The successful revolt of the Greeks, and the late triumph of the Russians, together with the disaffection manifested by the Christian population of Turkey, excited in the ambitious mind of Mehemed Ali, Pasha of Egypt, the desire for independence: see MEHEMED ALI. The war which ensued was from first to last in favor of the Egyptians; but the intervention of Russia compelled both parties to agree to a treaty (1833) satisfactory to neither. M. was then forced to grant fresh concessions to his 'good friend and ally' the czar, by the treaty of Unkiar-Skelessi (q.v.), 1833, July 8, and by another treaty in the following year. He was again at liberty to pursue his reforms in civil administration, the principal improvements being the modification and readjustment of the more oppressive taxes, the formation of a militia on the principle adopted by England, increased privileges to Frankish merchants, and the abolition of the export duty on grain. In 1839, he renewed the war with Mehemed Ali, but died before its conclusion.

MAHOGANY, n. *mă-hög'ă-nă* [W. I. *mahagoni*, a native name]: a forest-tree of tropical Amer. the *Swiētē'nia mahag'ōnī*, ord. *Cedrelācēa*: also the wood of the trunk. The tree is 80-100 ft. high, native of the W. Indies and S. America. It has pinnate leaves with 3-5 pair of leaflets, and panicles of small whitish or yellow flowers, the stamens united into a tube toothed at the summit, and set round on the inside with 8-10 anthers. The capsule is 5-celled, about the size of a man's fist, hard, woody, and oval, and the seeds are winged at the apex. It attains immense size, second to few others, and its timber is generally sound throughout in the largest trees. The slow progress which it is observed to make, clearly indicates that the trees which are cut for use must have attained a great age: 200 years has been assumed as an approximation. It is most abundant on the coast of Honduras and around Campeachy Bay, whence the greater portion of that used in Europe is exported. St. Domingo and Cuba also yield a considerable quantity, of finer quality than that obtained from the mainland, which is frequently called Bay Wood, to distinguish it from the Cuba mahogany, usually called Spanish. The occupation of cutting this timber and removing it to the coast for shipment, is exceedingly laborious, and employs a large number of men and oxen. The wood varies much

in value, according to the color and beauty of curl; single logs have occasionally brought as much as \$5,000, for cutting into veneers, in which form it is generally used, its great weight and value unfitting it for being always employed solid. It was first introduced into Britain by accident 1597, having been used to repair one of Sir Walter Raleigh's ships at Trinidad; but though the wood so employed was much admired, it did not become an article of commerce until a little more than a century later, when another accident brought it into notice and demand, and it became an article of luxury, and has since maintained the highest position as a cabinet-maker's wood. The annual imports into Britain are about 40,000 tons, with a value of about £400,000. The bark has a faint aromatic smell, and a very astringent bitter taste, and in the countries where the tree grows, is used as a medicine. In England it has been recommended and used under the name *Mahogany Bark*, or *Amaranth Bark*, as a substitute for Peruvian Bark.—EAST INDIA MAHOGANY is the timber of the *Rohuna Tree* (*Soyimida febrifuga*), and AFRICAN MAHOGANY of the *Khaya Senegalensis*, both of the order *Cedrelaceæ*.

MAHOMET, n. *mâ'höm-ët*, spelled also MOHAM'MED (q.v.): author and founder of a new system of religion and civil polity, born at Mecca, in Arabia, A.D. 571. MAHOMETAN, n. *mă-höm'ë-tăn*, or MOHAM'MEDAN, a follower of Mahomet; a Mussulman: ADJ. of or pertaining to Mahomet. MAHOM'ETANISM, n. *-tăn-izm*, or MOHAM'MEDANISM, n., the religion established by Mahomet. MAHOM'ETANIZE, v. *-tăn-iz*, to convert to the religion or customs of the Mahometans. MAHOM'ETANIZING, imp. MAHOM'ETANIZED, pp. *-izd*.

MAHON', Viscount: see STANHOPE (PHILIP HENRY), Earl.

MAHONE, *ma-hōn'*, WILLIAM: engineer: b. Southampton co., Va., 1826, Dec. 1. He graduated at the Va. Milit. Institute 1847; became a civil engineer; constructed the Norfolk and Petersburg railroad; assisted in seizing the Norfolk navy yard at the outbreak of the rebellion, 1861, Apr.; raised the 6th Va. regt. for the Confederate army, and commanded it in the chief operations in Va.; was promoted brig.gen. 1864, Mar., and maj.gen. Aug. 12; subsequently commanded a div. in Gen. Ambrose P. Hill's corps; and was in command at Bermuda Hundred when Gen. Lee surrendered. After the war he became conspicuous as a republican politician; organized and led the 'readjuster' party, which advocated the repudiation of the state debt conditionally; was U. S. senator 1881-87; and was defeated for re-election. He was an astute politician, had a large following in Va., and aroused intense animosity. He d. 1895, Oct. 8.

MAHO'NIA: see BARBERRY.

MAHOPAC, *ma-hō'pāk*, LAKE: one of the numerous lakes of Putnam co., N. Y.; abt. 45 m. n. of New York, 12 m. e. of the Hudson river, 10 m. from the Conn. state line.

MAHOUND--MAHRATTAS.

It is 1,800 ft. above sea-level, 8 or 9 m. in circumference, and is a favorite summer resort.

MAHOUND, n. *mâ-hownd'*: an old contemptuous name for Mahomet; a fierce, savage character; the devil.

MAHOUT, n. *mă-hôt'*: in *E. I.*, an elephant-driver.

MAHRATTAS, *mâ-rât'taz*: people of Hindu race, inhabiting central India, s. of the Ganges, from Gwalior to Goa; supposed by many to be the descendants of a Persian or N. Indian people driven southward by the Mongols. They are mentioned in history first about the middle of the 17th c., when they possessed a narrow strip of territory on the w. side of the peninsula, from 15° to 21° n. lat. The founder of the Mahratta power was Sevaji, a freebooter or adventurer, whose father was an officer in the service of the last king of Bejapûr. By policy or by force, he eventually compelled the several independent chiefs to acknowledge him as leader, and with the large army then at his command, overran and subdued a large portion of the emperor of Delhi's territory. His son and (1680) successor, Sambaji, after vigorously following out his father's policy, was taken prisoner by Aurungzebe 1689, and put to death. The incapacity of the subsequent rulers who reigned under the title of *Ramrajah* ('great king'), led the two chief officers of state, the *Peishwa*, or prime minister, and the paymaster-gen., to divide the empire between them, about 1749; the former fixing his residence at Poona, and retaining nominal supremacy over the whole nation of the M.; while the latter made Nagpûr his capital, and founded the empire of the Berar Mahrattas. This paction, of course, required the sanction of the more important among the minor chiefs and officers of state, who gave their consent on condition of receiving a share of the spoil. The ultimate result was the partition of the Mahratta kingdom into a great number of states, more or less powerful and independent; chief among which were, besides the two above mentioned, Gwalior, ruled by the Rao Scindia; Indore, by the Rao Holkar; and Baroda, by the Guicowar. It was to be expected that the usual intestine wars would supervene, and ultimately the E. India Company was compelled to interfere. The invasion of the Delhi empire by Nadir Shah afforded these wild and warklike mountaineers an opportunity, of which they eagerly availed themselves, to wrest additional territory from the feeble grasp of the Mogul emperor. From this time they discharged the office of arbiters in the quarrels between the emperor, his vizier, and his rebellious subjects; but their frightful defeat (1761, Jan.) at the hands of Ahmed Shah Abdalli, ruler of Afghanistan, on the field of Paniput, where they lost 50,000 men, and all their chiefs except Holkar, weakened their power for a time. They still, however, continued to be the hired mercenaries of the Delhi emperor, till the growing influence of the British compelled them to look to their own safety. After many long and bloody

contests with the British and their allies, in which sometimes the whole, but more frequently a portion of the M. joined, they were one by one, with the exception of Scindia, reduced to a state of dependence. This last-mentioned chief, having raised a powerful army, officered by Frenchmen, and disciplined after the European method, continued the contest for a number of years, till his power was finally broken 1843. The dignity of Peishwa was abolished 1818, and his territories were occupied by the British, with the exception of a portion which was made over to another Mahratta chief, the Rajah of Sattara, their faithful ally; Nagpûr and Sattara subsequently reverted to the British govt., but the other chiefs still possess extensive dominions, under British protection.

The M. are a vigorous and active race, and though diminutive and ill-formed, are distinguished for courage. They are cruel and perfidious, and have exercised a disastrous influence on the inhabitants of the countries that they have conquered. Though devout worshippers of Brahma, no distinctions of caste exist among them. Some American and other missionaries among them have had encouraging success.

MAI, *mâ'ê*, nearly *mî*, ANGELO, Cardinal: distinguished editor and scholar in ancient literature: 1782, Mar. 7—1854, Sep. 9; b. in the village of Schilpario, Lombardy; of peasant parentage. He was educated and lived till 1808 in establishments belonging to the Jesuits; but obtained an appointment first as associate, and ultimately as doctor in the celebrated Ambrosian Library at Milan. His career as an author dates from this appointment. In 1813, he published a translation and commentary of Isocrates, *De Permutatione*; but his reputation is due to his publications of the palimpsests or re-written manuscripts, the first specimens of which he issued at Milan (see PALIMPSEST). His earliest publications in that line were fragments of *Cicero's Orations*; of the *Vidularia*, a lost play of Plautus; of *Letters of Fronto*, Marcus Aurelius's preceptor; the *Chronicon* of Eusebius, and other less important works. These were eclipsed by his edition and restoration of the *De Republica* of Cicero, 1820. Meanwhile M. had been invited to Rome by Pius VII., and named to the charge of the Vatican Library, with other honorable and emolumentary appointments. He at once turned his attention to the unedited mss. of the Vatican, and undertook, as the mission of his life, the task of publishing those among them which had been overlooked by earlier editors. Though he was appointed, 1833, to the onerous office of secretary of the Propaganda, and 1838 to the cardinalate itself, his Roman publications form a collection of an extent and importance almost unexampled in modern times. His first series was in ten 4to vols., entitled *Scriptorum Veterum Nova Collectio, e Vaticanis Codicibus edita* (Rome 1825). It consists, like the great collections of Mabillon, Montfaucon, D'Achery, and others, of miscellaneous unpub-

lished works, partly sacred, partly profane, and indifferently in the Greek and the Latin languages, comprising an entire vol. of palimpsest fragments of the Greek historians, Polybius, Diodorus, Dion, Dionysius, and others. The succeeding collections, viz. *Classici Auctores ex Codicibus Vaticanis* (10 vols. 8vo, 1838), *Spicilegium Romanum* (10 vols. 8vo, 1839-44), and *Nova Patrum Bibliotheca* (6 vols. 4to, 1853) are on the same plan, all equally replete with new and interesting materials. For many years he was engaged in preparing an edition of the celebrated *Codex Vaticanus*, which he had printed, but the publication of which was postponed, awaiting the preparation of his intended preliminary dissertations. He died, however, rather unexpectedly, near Albano; and as no trace of the expected preliminary matter was found among his papers, the edition was published (1857) entirely without critical matter, and was not satisfactory; neither is a subsequent, and sumptuously edited by Vercellone and Cozza (Rome 1868), all that can be desired. (A good ed. of the *Codex* by Tischendorf, appeared 1867). M., though a most laborious and persevering discoverer, was not a textual critic of the first rank for either sagacity or accuracy. His library, which he bequeathed to the Vatican at half its estimated value, was purchased by the pope on the terms of M.'s will which applied the proceeds of the sale to relief of the poor of his native village.

MAIA, n. *mā'yâ*: in *Gr. myth.*, daughter of Atlas, and mother of Hermes or Mercury.

MAIA: see PLANETOIDS.

MAIA, n. *mā'yâ*: in *zool.*, the spider crab; typical genus of the family *Maiidae*.

MAID, n. *mād* [Goth. *magus*, a boy; *magaths*, a maid: O.H.G. *magad*; Ger. *magd*, a maid: W. *magu*; Bret. *maga*, to breed: comp. Gael. *maighdean*, a virgin]: a virgin; an unmarried woman; a female servant. MAID-SERVANT, a female servant; an implement in the laundry, consisting of a wooden stem, having a stout cross-handle at one end, and a kind of knob at the other. MAIDEN, n. *mād'n*, a maid; a young unmarried woman; a guillotine formerly used in Scotland (see below). ADJ. pertaining to a maid or to the unmarried state; fresh; new; unpolluted; first, as a *maiden* speech. MAID'ENLY, a. -*lī*, like a maid; gentle; modest: AD. in a maiden-like manner. MAIDEN-LIKE, like a maiden. MAIDENHOOD, n. *mād'n-hûd*, or MAID'ENHEAD, n. -*hêd* [A.S. *mædenhad*]: virginity; newness; freshness; virgin purity. MAID'ENLINESS, n. -*lī-nēs*, the quality of being maidenly; modest. MAIDEN ASSIZE, assize at which there is no criminal to be tried. MAIDEN-HAIR, genus of beautiful ferns (see below). MAIDEN SPEECH, the first speech of one in a public assembly, as a newly elected M.P. making his first speech in parliament. MAIDS OF HONOR, ladies of high birth in attendance on a queen, varying in number—Queen Victoria has eight (see LADIES OF THE QUEEN'S

MAIDEN—MAIDENHAIR.

HOUSEHOLD). MAID-OF-ALL-WORK, a general servant for all domestic work.

MAID'EN, THE: name given to a machine for beheading criminals, in use in Scotland from about the middle of the 16th c. to nearly the end of the 17th c. It is said to have been introduced into Scotland by the Regent Morton, who had seen it at Halifax, in Yorkshire, and was himself the first to suffer by it; but he certainly was not its first victim. 15 years before he was put to death by it (1581), it was employed to behead Thomas Scott of Cambusmichael, one of the murderers of Riccio (1566). It seems to have been called at first indifferently 'The Maiden,' and 'The Widow,' a brutal sort of pleasantry. A frightful instrument of punishment used in Germany in the middle ages was called 'The Virgin': but it had no resemblance to the M., which was exactly like the French Guillotine (q.v.), except that it had no turning-plank on which to bind the criminal. The M. which was used in the Scottish capital is now in the Museum of the Antiquaries of Scotland at Edinburgh.

MAID'ENHAIR (*Adiantum Capillus-Veneris*): small, delicate, and graceful fern, with bipinnate fronds, alternate, obovate, and wedge-shaped membranaceous pinules on capillary stalks, and marginal *sori* hidden beneath oblong *indusia*; growing on moist rocks and old walls, especially near the sea; rare in Britain, but very abundant in s. Europe, where it covers the inside of wells and basins of fountains (as at Vacluse) with a tapestry of most delicate green. Another species of the



True Maidenhair (*Adiantum Capillus-Veneris*).

same genus, *A. pedatum*, native of N. America, with pedate leaves, has a sweet, fragrant root-stalk, of which *Capillaire* (q.v.) is made. It is supposed that the name M. originated in the use of a mucilage made from this

MAIDENHEAD—MAIGRE.

fern by women for stiffening their hair. This name is sometimes applied also to some species of Spleenwort (*Asplenium*), as *A. adiantum nigrum* and *A. trichomanes*.

MAID'ENHEAD: municipal borough and market-town of England, county of Berks; amid beautiful scenery, on the right bank of the Thames, 22½ m. w. of London. It has a large brewery, and some trade in meal, malt, and timber. A fine stone bridge (1772) here crosses the Thames. Pop. (1891) 10,607; (1901) 12,980.

MAID-MARIAN, n. *mā-d-mā'ra-ān* [F. *morion*, a helmet]: a morris-dance; subsequently, the queen of the May, or female performer in it. *Note*.—This OE. term is derived by some from *mad-morion*, the boy performer in it wearing a morion; while others affirm it was an original and adopted name for the female performer, and after the dance degenerated into coarse buffoonery, the character was called *maid-maukin* instead of *maid-marian*.

MAIDSTONE, *mād'ston* (old form, *Me.lwegston*): county town of Kent, England, on the right bank of the Medway, 43 m. from London by the Southeastern railway, about midway from London to Dover. It is a municipal borough. It stands in a noted corn-district; its grain-market is the most important in the county; and in the vicinity are the famous hop-grounds known as 'the middle growth of Kent.' The parish church, All Saints, built toward the close of the 14th c., in the perpendicular style, contains many interesting tombs. The remains of the College or Hospital of All Saints, which grew out of a hospital founded 1260 at the entrance of the town for the benefit of pilgrims travelling to Canterbury, are highly picturesque. M. has numerous educational and charitable institutions. An extensive oil mill, several paper mills, sacking and twine manufactories, and several breweries, are in operation. Pop. of parliamentary borough (1881) 39,662; (1891) 32,145.

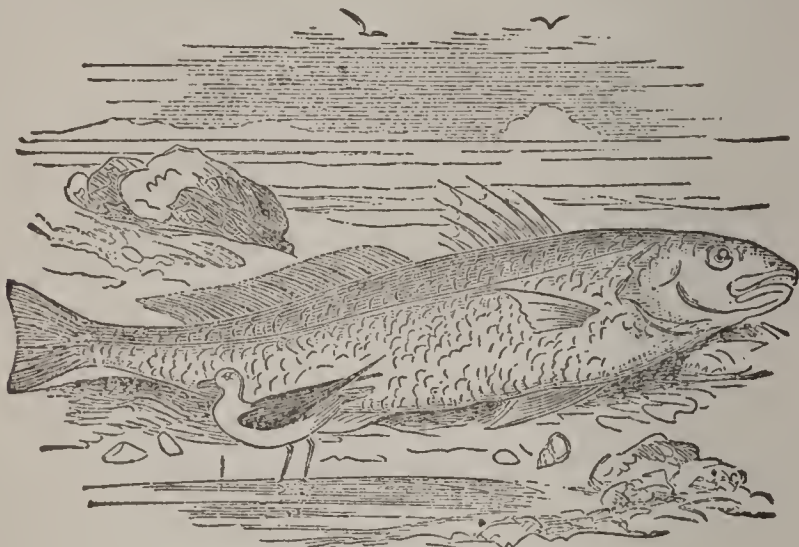
MAIEUTIC, a. *mā-yūt'ik*, or **MAIEUTICAL**, a. *mā-yūt'ik-āl* [Gr. *maieutikos*, pertaining to a midwife—from *maia*, a midwife]: assisting child-birth; hence assisting or facilitating production.

MAIGRE, n. *mā'gér*: in cook., applied to preparations of any kind made without butcher's meat, poultry, or game, and cooked with butter instead of lard or dripping. **MAI'GRE-DISH'ES**, n. dishes eaten by Rom. Catholics on days when flesh-meat is forbidden. They include fish, vegetables, fruit, eggs, omelets, etc.

MAIGRE, *mā'gér* (*Sciæna aquila*): fish of the acanthopterous family *Sciænidae*, common in the Mediterranean Sea, rare visitant of British shores. It attains a large size, being seldom taken less than three ft., while it is sometimes six ft. long. In general appearance, it much resembles a large bass, but the head is shorter and more rounded, and the tongue and roof of the mouth are destitute of teeth. The M. is in very high esteem for the table, and the head is a favorite delicacy of epicures.

MAIL.

The strength of the M. is such that a stroke of its tail will throw down a man; and when it is taken, the fishermen therefore quickly stun it by a blow on the head. It is one of those fishes which emit a peculiar sound, which has been described as a kind of purring or buzzing, and has been heard from a depth of 120 ft. Fishermen have been guided by this sound to let down their nets so as to inclose a number of maigres. The M. ap-



Maigre (*Sciæna aquila*).

pears to be the *umbrina* of the Romans, highly esteemed for food. The stones of its ears were formerly set in gold, and worn on the neck, imaginary virtues being ascribed to them, particularly in the cure of colic; but it was requisite that they should be obtained as a gift and not by purchase.

MAIL, n. *māl* [F. *maille*; It. *maglia*, the mesh of a net, a ring—from L. *macula*, a spot, a hole]: defensive covering for soldiers, consisting of steel-ringed or net work; defensive armor for the body, more pliable and light than the cumbrous plate-armor: an article composed of rings interwoven, used in ships for rubbing off loose hemp from the cordage. MAIL-CLAD, or MAILED, a. *māld*, covered with defensive armor.

MAIL, n. *māl* [AS. *mal*; Icel. *mala*, tribute: Gael. *māl*, tribute, rent]: in *Scotch law*, a term signifying rent; tribute. BLACK-MAIL, a tax paid to freebooters for protection of property. RENT-MAILING, a farm. *Note*.—BLACK-MAIL was a purely Highland extortion; Gael. *blathaich* signifies, 'to protect, to cherish,' hence *black-mail* was the tribute or tax for protection—thus *black*, the color, has nothing to do with *black* in BLACK-MAIL—Dr. C. Mackay.

MAIL, n. *māl* [AS. *mal* or *mæl*, a spot, a blot: prov. Eng. *mail*, a speck on the feathers of a bird]: a spot on cloth, especially what is caused by iron.

MAIL, n. *māl* [Norm. F. *male*, a large budget: F. *malle*, a trunk: O.H.G. *malaha*; It. *mala*; Bret. *mal*, a trunk, a case: Gael. *mala*, a bag, a purse]: *originally*, a bag for the conveyance of letters; *now*, any conveyance by which

MAILED CHEEKS—MAIMATCHIN.

letters are forwarded to their destination; the letters themselves: V. in *Amer.*, to prepare for transmission by mail; to post letters or parcels (see POST-OFFICE). MAIL-ING, imp. MAILED, pp. *māld*, transmitted by mail. MAIL-ABLE, a. *māl'ā-bl*, that may be sent by post. MAIL-BAG, a leathern bag or sack, varying much in size, in which assorted letters and book-parcels are placed for a particular destination to be there distributed. MAIL-COACH or -CART, a vehicle or carriage for conveying mail-bags, etc., from one place to another. MAIL-TRAIN, on a *rail-way*, a fast train by which mail-bags are conveyed.

MAILED CHEEKS (*Sclerogenidæ* or *Triglidæ*): family of acanthopterous fishes, characterized by an enlargement of certain bones of the head and gill-covers to form a bony armor for the cheeks. They exhibit great variety of forms; some remarkable for elegance and for delicate or splendid hues; others for extreme ugliness. Gurnards (q.v.) are among the best known and most valuable of this family. To it belongs also Bull-heads (q.v.) and *Scorpænæ* (q.v.). Sticklebacks (q.v.) are sometimes referred to it. The species are widely distributed in the seas of all parts of the world; a few inhabit lakes and rivers.

MAIM, v. *mām* [OF. *mahain*, the mutilation of a membrane, a defect: mid. L. *māhannārē*, to maim; *mahanūm*, a blemish: OE. *maym*, a hurt]: to deprive of any necessary part of the body; to disable; to cripple; to disfigure; to mangle; to mutilate: N. an injury done to the body by depriving it of a necessary part; a crippling. MAIM'ING, imp.: N. shooting, stabbing, or otherwise seriously injuring a person; therefore, as a criminal offense, properly belonging to the heads of Assault, Attempt to Murder, and offenses against the person generally. Maiming cattle is classed under the head of Malicious Injuries to Property. MAIMED, pp. *māmd*: ADJ. disabled in limbs; crippled. MAIMEDNESS, n. *mām'ēd-nēs*, state of being maimed.

MAIMATCHIN, *mī-mā-chēn'*: trading town on the n. boundary of Mongolia, opposite Kiahta (q.v.).

MAIMONIDES.

MAIMONIDES, *mī-mōn'ē-dēz*, or MOSES BEN MAIMON, *mō'zēz bēn mī'mon* (RAMBAM = RABBI MOSES BEN MAIMON), B. JOSEPH B. ISAAC B. JOSEPH B. OBADJAH, etc.; Arab. ABEN AMRAN (AMRU) MUSA IBN ABDALLAH IBN MAIMON AL-KORTOBI: 1135, Mar. 30—1204, Dec. 13; b. Cordova: Hebrew Rabbi, one of the greatest of Jewish theologians and philosophers. Little is known of his early life, which was in the troublous period of the Moravide rulers. Under the guidance of the most distinguished Arabic masters of the time, M. studied Greek (Aristotelian) philosophy, the science of medicine, and theology. When, 1148, the Al-Mohads (Unitarians), took Cordova, both Jews and Christians there were forced either to profess Islam or to emigrate. M.'s family, however, with many others to whom emigration was nearly impossible, gave up for 16 years the public profession of Judaism, but remaining faithful to it in secret, and keeping close communication with their co-religionists abroad, an arrangement in which the government acquiesced. When the death of the reigning sovereign brought no larger tolerance, they emigrated 1165 by way of Jerusalem, to Cairo. M. in Fostât (Old Cairo) gained his livelihood by the jewel-trade, until his great medical knowledge procured him the high office of physician to Salah Eddin, reigning sultan of Egypt. M.'s importance for the religion and science of Judaism, and his influence on their development, is so great, that he has often been placed second to Moses. He brought order into those boundless receptacles of tradition, and the discussions and decisions to which they had given rise, which, utterly without system, lie scattered through the works of Haggada and Halacha—Midrash, Mishnah, Talmuds. With the spirit of lucid Greek speculation, and the precision of logical thought of the Arabic Peripatetics, M., aided by an enormous knowledge, became the founder of a rational, or rationalistic, Scriptural exegesis. The Bible, and all its written and implied precepts, he endeavored to explain by the light of reason, with which nothing really divine could, according to his theory, stand in real contradiction. The miracles themselves, though not always traceable to their immediate cause, yet cannot be wrought in opposition to the physical and everlasting laws in nature. Where literal interpretation seems to lessen the reverential awe due to the Highest Being, there an allegorical explanation is to be adopted unhesitatingly, M.'s philosophical system has similarity with that of Averroes; both drawing from the same classical sources, and arriving independently with individual modifications, to nearly the same views on the great problems of the universe. Exalting man's reason, when tutored by divine revelation, M. fully allows the freedom of will, and condemns a life of idle asceticism, and dreamy, albeit pious contemplation. Providence, M. holds, reigns in a broad manner over humanity, swaying the destinies of nations; but he denies its working in the single event that may

be fall the individual, who, subject to the great physical laws, must learn to obey them. The soul, and the soul only, is immortal, and the reward of virtue consists in its—strictly unbodily—bliss in a world to come; while the punishment of vice is the ‘loss of the soul.’

M’s first work of paramount import begun in his 23d year, and finished ten years later, is his Arabic commentary of the Mishnah (afterward translated into Hebrew), which forms a historical introduction to *Tradition*, or the Oral Law: this introduction has for more than 500 years, been deemed so essential a part of the Talmud itself, that no edition is considered complete without it. This was followed by the *Sefer Hammizwoth*, or Book of the Precepts, in Arabic (translated into Hebrew), which contains among other matters, the 13 articles of belief, recited as the creed in the Jewish ritual. A gigantic work followed 1180, under the title *Mishne Thorah* (Second Law), or *Yad Chasakah* (Strong Hand), a Hebrew compendium in 982 chapters, comprising the entire Halacha, and which, with astounding minuteness, lucidity, and precision, systematically arranges the results of the legal disquisitions gathered from the Talmudical labyrinths. M. reached his highest renown in his great Arabic work, *Delalath Al-Hairin* (Heb. Moreh Nebuchim, ‘Guide of the Erring’), a philosophical exegegis (translated into Hebrew; ed. in the original by Munk, 1856, etc.), which has contributed more than any other work to the rational development of Judaism, and has occasioned a long and bitter fight between orthodoxy and science—carrying out, as it did, to its last consequences the broad principle, that ‘the Bible must be explained metaphorically by established fundamental truths in accordance with rational conclusions.’ So bitter grew the contest between the subsequent spiritualistic Maimonidian and the ‘literal Talmudistic’ schools, that finally, about the middle of the 13th c., the decision was transferred into the hands of the Christian authorities, who began by burning M.’s books, continued by bringing to the fire all Hebrew books on which they could lay hands, and followed by a slaughter of thousands on thousands of Jews, men, women, and children, irrespective of their philosophical views. Under these circumstances, the antagonistic parties, chiefly through the influence of David Kimchi and others, came to a reconciliation, and withdrew their mutual anathemas; and, as time wore on, M.’s name became the pride and glory of the nation, who bestowed on him terms like the ‘Great Eagle,’ the ‘Light of Two Worlds,’ etc. Moreover as early as the 13th c., portions of his works, chiefly the *Moreh* (Doctor Perplexorum) became, in Latin versions, text-books in European Christian universities.

M. witnessed only the beginning of the conflict whose proportions and violence he certainly never anticipated. At his death, at Cairo, grief at the loss of the ‘Light of the Age’ was wide-spread in the East and the West.—See *The Guide of the Perplexed of M.*, translated and

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annotated by Dr. Friedländer (3 vols. 1886); also the life of M. by Friedländer.

MAIN, a. *mān* [Goth. *magan*, to be able: Icel. *mega*, to be able; *megin*, strength, the principal part of a thing]: chief; principal; first, as in size, rank, or importance; leading; important; in *OE.*, mighty; huge; vast; containing the chief part; forcible: N. the gross bulk or whole; violence, force, strength, or effort, as, he fought with might and *main*; the greater part; the ocean or sea; a continent or large island as distinguished from adjoining islands; a chief drain or pipe. MAIN'LY, ad. -*lī*, chiefly; principally. MAIN BODY, the part of an army between the advance and rear guards. MAIN CHANCE, the best sort of profit or advantage; a constant attention to one's own interest. MAIN-DECK, the principal deck of a ship. MAIN-KEEL, the keel as distinguished from the false keel. MAINLAND, n. *mān'lānd*, the continent; the principal land as opposed to an island. MAIN'-MAST, n. principal or middle mast in a ship (*main* is applied similarly to all the parts belonging or adjacent to this mast). MAIN'SAIL, n. the principal sail in a ship. MAIN-SHEETS, the ropes used for fastening the mainsails. MAINSPRING, n. the moving spring in a watch or time-piece. MAIN-STAY, n. *mān'stā*, chief support. MAIN-TOP, a platform over the head of the mainmast. MAIN-YARD, the yard on which the mainsail is extended. IN THE MAIN, for the most part; on the whole.—SYN. of 'main, a.': head; capital; cardinal; mighty; first; absolute.

MAIN, n. *mān* [F. *main*, hand]: in *OE.*, a hand or throw at dice; a cock-fighting match.

MAİN: river of Germany, largest affluent of the Rhine from the right; formed by union of two branches, the White and Red M., four m. below Kulmbach, in Bavaria. The more important of these, the White M., rises in the Fichtelgebirge, 2,800 ft. above sea-level. The M. has a winding westward course 300 m. to the Rhine, into which it falls at Mainz. It is navigable for the last 220 m. The principal towns on its banks are Schweinfurt, Würzburg, Aschaffenburg, Offenbach, and Frankfurt; and its chief affluents are, on the right, the Saale, and on the left, the Regnitz. The M. is one of the most picturesque of German rivers; it flows through a beautiful country, where the hill-slopes are frequently covered with vineyards, and surmounted by castles. Its waters communicate with those of the Danube by means of the Ludwigs-Kanal. See BAVARIA.

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MAINE, *mān*: a state; one of the United States of America; 10th in order of admission into the Union, 1st in granite product, 3d in buckwheat, 11th in potatoes; and 24th in value of manufactures; known colloquially as the 'Pine Tree State.'

Location and Area.—M. is in lat. $43^{\circ} 04'$ — $47^{\circ} 31'$ n., long. $66^{\circ} 45'$ — $71^{\circ} 06'$ w.; bounded n. by the provinces of Quebec and New Brunswick, Canada; e. by New Brunswick, s. by the Atlantic Ocean, w. by N. H.; extreme length 320 m., greatest breadth 210 m.; 33,040 sq.m. (21,145,600 acres); elevation 300–5,385 ft.; sea coast 2,486 m.; river and lake area 3,200 sq.m.; cap. Augusta.

Topography.—The surface slopes from the interior toward the n. to the valley of St. John river, where it is about 300 ft. above sea-level, and toward the s. and s.w. to the ocean, where it is low, level, and in some places marshy, though the shores are in parts rocky. The Appalachian chain enters M. from New Brunswick at Mars Hill, and after traversing it s.w. becomes a part of the White Mountain system at the N. H. line. The principal elevations are Mt. Katahdin, in Piscataquis co., 5,385 ft.; Mt. Abraham, 3,400, and Mt. Blue, 2,800, in Franklin co.; Mars Hill in Aroostook co., 2,000; Mts. Mattatuek, Puzzle, Saddlebaek, Bigelow, and Agamenticus; the Camden Hills; Bald Mountain; and a number of peaks on Mount Desert Island. The largest river is the Penobscot, which, with branches and connecting lakes, drains the centre of the state, and is navigable 55 m. from its mouth. The Kennebee drains the w., and is navigable for ships 12 m. and smaller boats 50 m. from its mouth. Between the Kennebee and the w. boundary are the Androscoggin and Saco rivers, the Piscataqua forms the s.w. boundary, the St. Croix a portion of the e., and the St. John the greater part of the n. boundary. Along the sea-coast are 17 large bays, chief of which are Passamaquoddy, Machias, Little Machias, Englishman's, Narraguagus, Frenchman's, Penobscot, Belfast, Muscongus, Damariscotta, Sheepscott, Quohog, Casco, Saco, and Piscataqua. Among the numerous islands between Quoddy head and Kittery point are Mt. Desert, w. of Frenchman's Bay (area 60,000 acres), with 13 peaks, the highest 1,800 ft.; Isle au Haute, near the entrance to Penobscot Bay; Deer, Long, and Fox, in that bay; and the Isles of Shoals group, part of which belong to N. H. M. is thickly studded with clusters of connected lakes and many isolated ones; the largest, Moosehead, is 35 m. long, and 4–12 m. wide. The Androscoggin river drains the Umbagog chain, the Presumpscut river the Sebago and surrounding lakes, the Kennebec river the Moosehead cluster, and the Saco river more than a dozen small ones. In the n. are nearly 100 lakes and large ponds drained by St. John river and its numerous tributaries; and the Penobscot, which drains nearly one-third the area of the state, takes, with its branches, the surplus water of more than 50 large lakes and ponds.

Climate.—The winters are severe, but without violent

changes; summers short and hot. Snow lies on the coast $3\frac{1}{2}$ –5 months, in the interior $4\frac{1}{2}$ –6 months. Fogs and n.e. winds from the Atlantic in the spring and early summer produce considerable pulmonary distress along the coast. The temperature ranges from 20° below to 100° above zero through the year. At Portland (lat. $43^{\circ}40'$ n., long. $70^{\circ}14'$ w.) it has averaged 23° – 38° in winter, and 63° – 69° in summer, with annual mean barometer 29.963, thermometer 43.90 , rainfall 42.32 inches, prevailing wind s.w. The average rainfall in the state is 34.46–45.25 inches.

Geology.—The surface strata are chiefly of primitive formation, with Silurian rocks in the n. and n.e., and Devonian overlying the Silurian in the n. Boulders, sand, and gravel of the drift formation are found everywhere, and along the s. the drift has a sub-stratum of tertiary clays. Granite abounds at Hallowell, Bath, Thomaston, Dix Island, and elsewhere; ornamental red granite at Calais; argillaceous slates and limestones through the n.; tourmalines at Paris; garnets at Parsonsfield and Phippsburg; felspar at Brunswick and Topsham; beryls at Bowdoinham; iron ore of excellent quality near Mt. Katahdin; slate for roofs, tables, blackboards, and writing slates in a belt between the Kennebec and Penobscot rivers; red sandstone along the shore of Passamaquoddy Bay; and red hematite along the Aroostook river. The granite and limestone of M. are greatly esteemed through the United States for their superiority as building stones. Lead, tin, copper, zinc, and manganese are found in various localities, and veins of silver-bearing galena have been discovered on Campbell's Island and on the shore of Cobscook Bay. The soil is very fertile in the river valleys, especially between the Penobscot and Kennebec and along the St. John; but along the sea coast and in the mountainous districts it is too sterile to repay cultivation. The central and n. portions of the state are covered with forests, in which pine, spruce, hemlock, maple, birch, beech, ash, and white and red oak predominate; cedar is found in the n. swamps; and poplar, elm, basswood, dogwood, juniper, pine, buttonwood, alder, and willow in the s. forests. The most thrifty fruits are cherry, plum, pear, and apple.

Zoology.—M. is now the sole home in the United States of the American elk, locally known as the moose and caribou. It abounds in the dense n. and central forests, and is hunted with a difficulty that gives zest to the sport. Other animals found in large numbers in these forests are black bear, deer, wolf, catamount, wild cat, badger, wolverine, marten, sable, weasel, mink, raccoon, porcupine, rabbit, woodchuck, and squirrel. The bays, lakes, ponds and rivers, in proper season, are the resort of wild geese, ducks, brant, and teal, and are well-supplied with cod, herring, menhaden, mackerel, salmon, trout, pickerel, and lobsters. Eagles, hawks, owls, crows, partridges, quail, wild pigeons, robins, and humming birds are plentiful through the state, and sea-gulls and fish-hawks along the coast.

Fisheries and Game.—The report of the State Commissioners of Fisheries and Game for 1888 showed a remarkable increase in venison game animals, increase in lobsters, decrease in mackerel, reappearance after 10 years' absence of menhaden, increase in herring-sardines, increase in black bass and white perch, and the fact that the Penobscot river has become the greatest salmon river for fly fishing in America. The commissioners had 30,000 sq. m. of territory to protect, stock, and cultivate; and recommended the passage of a non-exportation law for fish and game, to prevent game dealers from clearing the forests and waters by illegal means every season. During 1888, 60,000 salmon fry were liberated in St Croix river at Vanceborough, and 320,000 in the Penobscot and Mattawamkeag rivers, while 50,000 land-locked salmon were hatched at Orland and distributed in various ponds in six counties. The state purchased 232,000 salmon eggs, and the U. S. Fish Commission gave it 148,000. Under a recent protective law, lobsters were larger in size and more plentiful than for many years, and the annual catch was 25,000,000. The mackerel catch was 25,511 barrels. The product of the herring-sardine business for the year was 450,000 cases, of 100 boxes each, each box containing 10 or 12 fish. There were 40 packing factories in the state, and a disposition was reported to abandon French labelling and brand and sell the fish as herring. For lobster-canning there were 15 factories, which put up nearly 10,000,000 lbs.

Agriculture.—In 1890 there were 62,013 farms, comprising 6,179,925 acres, of which 3,044,666 were improved; value of farm lands \$98,567,730, farm implements and machinery \$5,499,413. Of live stock there were 109,156 horses, 278 mules and asses, 33,105 working oxen, 157,278 milch cows, 108,727 other cattle, 370,484 sheep, and 91,297 swine. The leading products were: barley 286,262 bu., buckwheat 466,411 bu., indian corn 380,662 bu., oats 3,668,909 bu., rye 6,664 bu., wheat 79,826 bu., hops 24,873 lbs., pease 18,780 bu., beans 149,710 bu., milk 57,969,791 gals., butter 15,593,315 lbs., cheese 696,671 lbs. In 1895 M. produced 596,904 bu. of corn, valued at \$322,328, from 14,212 acres; wheat 83,808 bu., value \$68,723, acres 4,365; oats 5,551,484 bu., value \$1,887,505, acres 138,441; hay 1,127,051 tons, value \$10,909,660, acres 1,104,932; potatoes 10,139,089 bu., value \$3,447,290, acres 62,203. In 1900 there were 64,309 farms, comprising 6,552,578 acres; value of all farm property, \$123,805,039.

Manufactures.—M. had (1890) 5,010 manufacturing establishments, employing 75,780 hands, using a capital of \$80,419,809, paying in wages \$26,526,217, using materials valued at \$51,520,589, yielding products valued at \$95,689,500. Among the leading industries were the following: Cotton goods, establishments 23, capital \$20,850,754, employees 13,992, wages \$4,372,473, materials \$8,446,736, products \$15,316,909; lumber and planing mill products, establishments 898, capital \$12,846,387, employees 9,592, wages \$2,852,021, materials \$6,514,791, products \$11,993,.

130; boots and shoes, factory product, establishments 53, capital \$4,804,946, employees 6,597, wages \$3,078,466, materials \$5,800,682, products \$10,335,342; woolen goods, establishments 75, capital \$8,338,864, employees 4,323, wages \$1,629,888, materials \$4,960,119, products \$7,521,317, leather, tanned and curried, establishments 51, capital \$2,231,702, employees 911, wages \$411,791, materials \$2,307,343, products \$3,336,672; flouring and grist mill products, establishments 210, capital \$1,194,900, employees 463, wages \$186,420, materials \$2,806,869, products \$3,257,690; canning of fruits, fish, oysters, and vegetables, establishments 79, capital \$1,542,400; employees 4,524, wages \$687,263, materials \$1,601,393, products \$2,853,563; clothing, men's, establishments 186, capital \$1,102,555, employees 6,906, wages \$1,057,172, materials \$1,237,073, products \$2,840,495; foundry and machine shop products, establishments 82, capital \$3,147,3, employees 1,903, wages \$1,041,663, materials \$39,070, products \$2,628,572; paper and pulp, establishments 17, capital \$4,273,825, employees 1,568, wages \$738,23, materials \$1,673,387, products \$3,281,051; printing and publishing, establishments 141, capital \$1,317,838, employees 1,516, wages \$713,067, materials \$4,508, products \$1,894,788. In 1900 there were 6,702 manufacturing establishments, employing \$122,918,826 capital and 74,816 persons; paying \$28,527,849 for wages and \$68,863,408 for materials; and yielding products valued at \$127,361,485.

Ship-building.—In 1888 the various ship-yards in M. turned out 36 schooners, 4 sloops, 4 steamboats, 2 steam tugs, 2 steam yachts, 1 bark, and 1 steam bark: total vessels 50; total tonnage 16,119.99. The great bulk of the new tonnage was large 3 and 4 masted schooners. The most notable craft constructed during the year were the 5-masted schooner, *Gov. Ames*, the largest schooner and the only 5-masted schooner in the world, and the steam tug *H. F. Morse*, the largest tug boat belonging in the United States. In the year ending 1896, June 30, the number was: 63 sailing vessels, 22,942 tons; 4 steam vessels, 17 tons; one barge, 127 tons, total 68 vessels, 25,426.

Commerce.—In 1896 the following were the exports and imports at the 10 ports of entry: Aroostook, imports \$179,339; Bangor, exports \$1,495,410, imports \$1,111,839; Belfast, exports \$806, imports \$43,408; Belfast, exports \$7,864, imports \$18,069; Castine, imports \$3,347; Machias, exports \$12,264, imports \$2,119; Passamaquoddy, exports \$312,449, imports \$637,507; Portland and Littleport, exports \$3,642,445, imports \$480,163; Waldoboro, imports \$63,545; Wiscasset, exports \$2,333, imports \$843. M. had 173 vessels registered of 111,071 tons; 1,000 vessels enrolled, of 192,685 tons; 590 licensed, 7,018 tons; a total of 1,925 vessels of 310,774 tons. Of these 1,745 sailing vessels of 204,921 tons; 168 steam vessels, 33,211 tons; 12 barges, 12,642 tons. M. has one canalized river, the Songo, for a distance of 7 miles, depth 10 ft. It contains a lock 96 ft. long and 24 ft. wide. It is operated by the state and cost \$20,000.

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Railroads.—The increase in railroad mileage in M. has been as follows: (1841) 11m.; (1851) 293 (1861) 472; (1871) 871; (1881) 1,013; (1890) 1,377; (1893) 1,517, (1894) 1,621; (1895) 1,705; (1901) 1,918. In 1895 there were 5.5 m. of railroad to each 100 sq. m. of territory and 22.61 m. to each 10,000 population. The total investment was \$60,057,762, of which \$28,519,199 was capital stock and \$29,619,392 funded debt. The cost of railroads and equipment was \$57,433,492, total earnings from all sources \$6,984,678, of which \$2,467,449 was from passenger traffic and \$4,045,274 from freight; net earnings \$2,245,840; interest on bonds \$1,737,651, dividends on stock \$744,061. The street railroads of M. numbered 13 in 1895 and aggregated 115 miles, of which 17 miles were horse and 98 miles were electric. The total capital stock was \$1,977,875, or \$17,200 per mile; the total funded debt was \$2,253,000, or \$19,600 per mile.

Religion.—In 1890 M. had 1,601 church organizations, 1,342 church buildings of 408,451 seating capacity and valued at \$6,192,400. The number of members or communicants was 159,846, or 24.18 per cent. of the total population. The Methodist Episcopal Church had 355 organizations, 290 churches with a seating capacity of 87,307, valued at \$1,152,875, and 22,996 members; Congregationalists, 240 organizations, 273 churches, 85,591 seating capacity, \$1,512,030 value, 21,523 members; Baptists (regular), 232 organizations, 219 churches, 61,354 seating capacity, \$915,550 value, 18,492 members; Free-will Baptists, 280 organizations, 232 churches, 67,930 seating capacity, \$584,750 value, 16,294 members; Protestant Episcopal, 38 organizations, 37 churches, 10,342 seating capacity, \$406,590 value, 3,291 members; Adventists, 97 organizations, 36 churches, 10,270 seating capacity, \$46,750 value, 2,964 members; Christians, 60 organizations, 28 churches, 7,690 seating capacity, \$76,380 value, 3,451 members; Friends, 23 organizations, 21 churches, 5,653 seating capacity, \$35,975 value, 1,430 members; Spiritualists, 21 organizations, \$15,650 value of church property, 2,562 members; Unitarians, 22 organizations, 1 church, 7,800 seating capacity, \$216,700 value, 2,441 members; Universalists, 86 organizations, 83 churches, 21,111 seating capacity, \$542,900 value, 3,750 members; Roman Catholics, 38 organizations, 70 churches, 29,941 seating capacity, \$597,550 value, 57,548 members.

Education.—The ordinary school age is 4–21 years, but in 1887 a compulsory school law was passed requiring all children 8–15 years old to attend public schools at least 16 weeks in each year, unless physically or mentally incapable or otherwise provided with instruction. In 1894–5 the number of children (4–21 years) enumerated was 208,042. The number in the state from 5 to 18 was enumerated at 159,900, of whom 80,820 were males and 79,080 females. Of these 135,598 were enrolled during the year, or 84.78 per cent. of the school population. The average daily attendance was 95,841, or 70.68 per cent. of the number enrolled; average number of school days kept during the year 133,

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aggregate 406,083,614, or an average of 119 attended by each pupil enrolled. There were 1,206 male teachers and 5,430 female teachers employed, total 6,636. The school hours numbered 4,242, estimated value \$3,677,715. The total receipts from all sources were \$1,827,828, of which \$46,040 came from permanent funds, \$516,698 from state taxes, and \$1,265,090 from local taxes; total expenditures \$1,819,050, or \$2.80 per capita and \$18.98 per pupil; of this \$252,727 went for sites, buildings, furniture, libraries, and apparatus, \$1,010,000 for salaries and \$556,323 for all other purposes. The high schools of the state numbered 111, with 6,869 secondary students (2,919 males and 3,950 females), and 2,557 below the secondary grade (1,254 males and 1,303 females). There were 1,122 students preparing for college, 877 in the classical course and 245 in the scientific. The graduates in 1895 numbered 784, of whom 200 were preparing for college. The high-school libraries (48 reporting) had 18,236 volumes; value of grounds, buildings, apparatus, etc. (70 reporting) \$654,875; state and municipal aid (83 reporting) \$62,696; tuition fees \$9,197 (46 reporting); productive funds \$4,589 (11 reporting); total income \$90,294 (88 reporting). In the private secondary schools, 39 in number, there were 3,322 secondary students (1,649 males and 1,673 females) and 517 elementary pupils (243 males and 274 females); instructors 173, of whom 72 were males and 101 females. There were 824 students preparing for college, 682 in the classical course and 142 in the scientific; there were 392 graduates, of whom 30 were preparing for college. The private secondary school libraries (32 reporting) had 33,855 volumes; value of grounds, buildings, apparatus, etc. (29 reporting) \$605,360; endowment funds (22 reporting) \$11,370; tuition fees (30 reporting) \$45,660; productive funds (19 reporting) \$24,008; total income (31 reporting) \$85,455; benefactions (3 reporting) \$1,550. Of these secondary private schools, 6 were Baptist, with 43 instructors and 954 students; 2 Congregational, with 9 instructors and 79 students; 1 Episcopal, with 3 instructors and 23 students; 1 Friends, with 8 instructors and 98 students; 2 Methodist, with 16 instructors and 493 students; 2 Roman Catholic, with 4 instructors and 73 students. There are 3 colleges and universities in Maine, with total attendance of 776 and 40 instructors; libraries 102,923 volumes, scientific apparatus \$175,000, value of grounds and buildings \$950,000, productive funds \$1,356,070, benefactions \$29,617, tuition fees \$43,889, state and municipal appropriations \$7,500, total income \$111,719. These institutions were: Bates College, Lewiston, organized 1863 (Free Bapt.) George C. Chase, D.D., LL.D., president, (1896) 18 instructors, 280 students, 18,000 volumes in library, \$321,000 production funds, total income \$34,017; Bowdoin College, Brunswick, organized 1794 (Congl.), William De Witt Hyde, D.D., president, 30 instructors, 378 students, 59,000 volumes in library, \$550,000 productive funds, total income \$47,000; Colby University, Waterville, organized 1818 (Bapt.), Rev. Nathaniel Butler, D.D., president, 15 instructors, 225

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students, 32,000 volumes in library, \$488,563 productive funds, total income \$33,112. The endowed academies, with their endowments (1895), were as follows: Somerset, at Athens, \$6,000; Gould, Bethel, \$1,000; Blue Hill, \$12,000; East Maine Conference, Bucksport, \$20,000; Higgins Classical Institute, Charleston, \$25,000; Bridge, Dresden Mills, \$45,000; Washington, East Machias, \$30,000; Pennell Institute, Gray, \$30,000; Hamden, \$10,000; Hebron, \$75,000; Kicker Classical Institute, Houlton, \$34,000; Maine Wesleyan Seminary, Kent's Hill, \$240,000; Phillips, Limerick, \$1,000; Livingston, \$500; Litchfield, \$600; Lincoln, Newcastle, \$12,000; Anson, North Anson, \$5,000; Bridgeton, \$15,000; Paris Hill, Paris, \$2,500; Pittsfield Central Institute, Pittsfield, \$10,000; Thornton, Saco, \$70,855; Potter, Sebago, \$31,500; Berwick, South Berwick, \$60,000; Erskine, South Erskine \$8,000; Oak Grove, Vassalboro, \$20,000; Colburn Classical Institute, Waterville, \$57,000, North Yarmouth, \$10,000.

Illiteracy.—Persons 10 years of age and over (1890) 541,662, illiterates 29,587, or 5.5 per cent.; males, total, 271,787, illiterates 15,932, or 5.9 per cent., females, total, 269,875, illiterates 13,655, or 5.1 per cent.; white population 10 years of age and over 540,157, illiterates 29,108, or 5.4 per cent.; native white 10 years of age and over 466,835, illiterates 11,443, or 2.5 per cent.; foreign whites, total 73,322, illiterates 17,665, or 24.1 per cent.; colored population 10 years of age and over 1,505, illiterates 479, or 31.8 per cent.

Finances and Banking.—The total bonded state debt (1897) was \$2,303,000, of which \$2,034,000 bore annual interest at three per cent., \$150,000 at four per cent., and \$118,300 at five per cent. The assessed valuation of real estate was \$257,389,047, personal property \$71,111,947, total \$328,500,994; state tax per \$1,000 was \$2.25 against \$2.50 in 1894 and \$2.75 in 1892. On 1903, Jan. 1, the bonded state debt was \$1,983,000. The assessed valuations for 1902 were, real estate \$283,054,326, personal property \$69,174,571; total \$352,228,897. There were (1902, Sept. 30) 86 national banks in operation in M.; capital stock paid in \$10,531,000, United States bonds and deposits \$32,413,438, circulation issued \$5,056,850, on hand \$73,264, outstanding \$4,983,585; loan and trust companies, 18; capital \$1,676,800, deposits \$12,577,500; mutual savings banks, 51; resources \$76,582,415, savings deposits \$72,082,694.

History.—The coast of M. was visited by the Northmen probably about 990, Cabot 1498, Verazzano 1524, Gomez 1525, Rut 1527, André Thevet 1556, Gosnold 1602, Pring 1603, and Du Mont, who attempted to establish a French settlement on St. Croix river 1604, and took possession of the shores of the Kennebec 1605. In the latter year Capt. George Weymouth explored the neighborhood of St. George river, and on his reports the Plymouth Company obtained a grant which included the present state, and sent an expedition to possess it 1607. This attempt to colonize failed. In 1607, George Popham, with two ships and 100 men from England, came to the mouth

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of the Kennebec, and built a storehouse and a fort; but Popham died the next year; and the colonists, discouraged by the severe winter, abandoned the settlement and returned to England. Du Mont having transferred his patent to Mme. de Guercheville, that lady fitted out another French expedition chiefly for missionary purposes, which landed at Mount Desert 1613, but was soon afterward dispersed by order of the Va. authorities. In 1614 Capt. John Smith took possession of Monhegan Island, established trade with the Indians on the Kennebec river, and explored much of the coast. Six years afterward the Plymouth Company received a new grant comprising all the country between lat. 40° and 48° n., the Va. Company being assigned all territory s. of the first patent. In 1622 Sir Ferdinando Gorges and Capt. John Mason were granted by the Plymouth Company the territory between the Merrimack and Kennebec rivers, and established the first permanent mainland settlement at the mouth of Piscataqua river 1623. Settlements were made at Monhegan and Saco about the same time. Between 1629-35 the Plymouth Company disposed of large tracts by grants, and prior to surrendering its charter to the English govt. divided the remainder among its members. In this distribution Gorges received the country between the Piscataqua and Kennebec rivers, and this grant was confirmed by the king 1639. Gorges organized a govt. which continued till 1677, when his heirs sold their interests to the Mass. colony. In the mean time Mass. claimed the territory; the transfer of Acadia to France was annulled and the territory was returned to France by treaty; the Dutch attempted to colonize the coast, conquered that part belonging to Nova Scotia and Acadia 1674, and were expelled by an expedition from Boston 1676; King Philip began his terrible Indian war 1675; and Charles II. granted the Kennebec-Penobscot tract to his brother James, Duke of York (see JAMES II.). In 1686 this territory was transferred to Mass., and the history of M. 1688-1820 is a part of that of Mass., which gave up claim to Nova Scotia, and had all the remainder of the territory in dispute secured to her by the treaty of 1783. After the close of the King Philip war, the remaining settlements were kept in a state of terror many years by the Abnaki group of Indians. During the revolutionary war Machias, Portland, Castine, and the Kennebec valley were the scenes of important events.

Agitation for the separation of the 'district of Maine' from Mass. began immediately after the peace with England. Many conventions were held 1784-91 to formulate amicable measures for separation. The difficulties between the state and its 'district' were intensified by the dispute between the United States and Great Britain concerning the boundary between M. and the British possessions, and it was not till 1819 that the local difficulties were adjusted, and Mass. gave its consent to the long-sought separation. M. suffered severely during the sec-

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ond war with England, had its vast shipping interests almost wholly destroyed, and during the greater part of the war much of its territory was in possession of the British. By act of congress the district of M. was admitted into the union on the same terms as the original states 1820, Mar. 15; and by the Webster-Ashburton treaty 1842 a large tract in the n. part of M. was ceded to Great Britain in return for slight additions to N. H. and Vt. and the right of free navigation of St. John river, and the great boundary dispute thus definitely settled. M. has a law prohibiting the sale of intoxicating liquors as a beverage; this law was the first of its kind adopted in the United States (see Dow, NEAL). During the civil war M. contributed to the Union army 31 regts. of inf., 3 of cav., and numerous companies of artil. and sharpshooters, aggregating 70,107 men.

Government.—The executive authority is vested by the constitution in a gov., elected for two years, salary \$2,000 per annum; the legislative in a general assembly comprising a senate of 31 members and a house of representatives of 151 members, both elected for 2 years, salary of each \$150 per annum and 20 c. mileage, biennial sessions; and the judicial in a supreme court of 8 members, appointed for 7 years, salary \$3,000 per annum, and in superior, co., municipal, and police courts. The gov. is assisted by a council, chosen by the legislature on joint ballot. The sec. of state receives \$1,200 per annum; treas. \$1,600; atty.gen. \$1,000; adj.gen. \$900; supt. public schools \$1,000; chief justice \$3,000; U. S. dist. judge \$3,500; collector internal revenue \$2,500; collector of customs \$6,000, and surveyor of customs \$4,500.

The successive govts., with their terms of service since the admission of the state into the union, are as follows: William King 1820–21; W. D. Williamson (act'g) 1821–2; Albion K. Parris 1822–27; Enoch Lincoln 1827–29; Nathan Cutler (act'g) 1829–30; Jonathan D. Hunton 1830–31; Samuel E. Smith 1831–34; Robert P. Dunlap 1834–38; Edward Kent 1838–9; John Fairfield 1839–40; Edward Kent 1840–41; John Fairfield 1841–43; E. Kavanagh (act'g) 1843–44; Hugh J. Anderson 1844–47; John W. Dana 1847–50; John Hubbard 1850–53; W. G. Crosby 1853–55; Anson P. Morrill 1855–6; Samuel Wells 1856–57; Hannibal Hamlin 1857; J. H. Williams (act'g) 1857–58; Lot M. Morrill 1858–61; Israel Washburn, Jr. 1861–63; Abner Coburn 1863–64; Samuel Cony 1864–67; Joshua L. Chamberlain 1867–71; Sidney Perham 1871–74; Nelson Dingley, Jr. 1874–76; Selden Connor 1876–79; Alonzo Garcelon 1879–80; Daniel F. Davis 1880–81; Harris M. Plaisted 1881–83; Frederick Robie 1883–87; Joseph R. Bodwell 1887–89; Edwin C. Burleigh 1889–93. Henry B. Cleaves 1893–97; Llewellyn Powers 1897–1901. John F. Hill 1901–04.

Counties, Cities and Towns.—M. is divided into 16 counties. In 1890 the most populous counties were: Cumberland 90,949; Penobscot 72,865; York 62,829; Kennebec 57,012; Aroostook 49,589; Androscoggin 48,968; and Washington 44,482; and *cities and towns*: Portland 36,425; Lew-

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iston 21,701; Bangor 19,103; Biddeford 14,443; Auburn 11,250; and Augusta 10,527.

Politics.—State elections are held second Monday in Sep.; congressional and presidential Tuesday after first Monday in Nov. The state govt. (1903) is republican with a party majority of 29 in the senate, 105 in the house and 134 on joint ballot. Paupers, persons under guardianship, and Indians not taxed are excluded from voting. M. has (1903) 6 electoral votes. Her votes for pres. and vice-pres. have been as follows: 1820, James Monroe and Daniel D. Tompkins 9; 1824, John Adams and John C. Calhoun; 1828, Andrew Jackson 1, John Q. Adams 8 for pres., John C. Calhoun 1, Richard Rush 8 for vice-pres.; 1832, Andrew Jackson and Martin Van Buren 10; 1836, Martin Van Buren and Richard M. Johnson; 1840, William Henry Harrison and John Tyler; 1844, James K. Polk and George M. Dallas 9; 1848, Lewis Cass and William O. Butler; 1852, Franklin Pierce and William R. King 8; 1856, John C. Fremont and William L. Dayton; 1860, Abraham Lincoln and Hannibal Hamlin; 1864, Abraham Lincoln and Andrew Johnson 7; 1868, U. S. Grant and Schuyler Colfax; 1872, U. S. Grant and Henry Wilson; 1876, Rutherford B. Hayes and William A. Wheeler; 1880, James A. Garfield and Chester A. Arthur; 1884, James G. Blaine and John A. Logan 6; 1888, Benjamin Harrison and Levi P. Morton; 1892, Benjamin Harrison and Whitelaw Reid; 1896, William McKinley and Garret A. Hobart; 1900, William McKinley and Theodore Roosevelt.

Population.—(1790) white 96,002, colored 538, total 96,540; (1800) white 150,901, colored 818, total 151,719; (1810) white 227,736, colored 969, total 228,705; (1820) white 297,340, colored 929, total 298,269; (1830) white 398,263, colored 1,192, total 399,455; (1840) white 500,438, colored 1,355, total 501,793; (1850) white 581,813, colored 1,356, total 583,169; (1860) white 626,947, colored 1,327, total 628,279; (1870) white 624,809, colored 1,606, total 626,915; (1880) white 646,852, colored 2,084, total 648,936; (1890) 661,086; (1900) 694,466.

MAINE—MAINPERNOR.

MAINE, *mān*: one of the anc. provinces of France, immediately s. of Normandy, corresponding to the modern depts. of Sarthe and Mayenne. Its chief town was Le Mans, now cap. of the dept. of Sarthe.

MAINE, Sir **HENRY JAMES SUMNER**, LL.D.: 1822–1888, Feb. 4; b. England: lawyer. He graduated at Pembroke College, Cambridge, England, 1844; was tutor there two years; Regius prof. of civil law 1847–54; reader on jurisprudence at the Middle Temple 1854–62; law member of the supreme govt. in India 1862–69; was elected Corpus prof. of jurisprudence in Oxford Univ. 1870; appointed member of the council of the sec. of state for India and knighted 1871; elected foreign associate of the French Acad. of Moral and Political Sciences, succeeding Ralph Waldo Emerson, 1883; and was offered and declined the office of permanent under-sec. of state at the home office. His publications comprise *Roman Law* (1856); *Ancient Law* (1861); *The Effects of Observation of India on Modern European Thought* (1875); *Lectures on the Early History of Institutions* (1875); *Modern Theories of Succession to Property after Death, and the Correction of Them, suggested by Recent Researches* (1878); *Dissertations on Early Law and Custom* (1883); and *Popular Government* (1885).

MAINE DE BIRAN, *mān dēh bē-rōng'*, **FRANÇOIS-PIERRE-GONTHIER**: philosopher: 1766, Nov. 29—1824, July 16; b. Bergerac. Driven into retirement by the horrors of the Revolution, he became a student of psychology, to which he brought an acute and subtle mind. The influence of his views can be traced in the best recent psychological works by French writers.

MAINE-ET-LOIRE, *mān-ā-lwâr'*: inland dept. of France, a portion of the lower basin of the Loire; 2,745 English sq. m. Of about 1,000,000 arable acres, near 200,000 are in meadow, and 95,000 in vineyards. The soil is fertile. Wines, red and white, are extensively produced. Iron and coal mines are worked; and there are mills for cotton, woolen, and linen. Cap. Angers.—Pop. (1881) 523,491; (1891) 518,589; (1901) 514,658.

MAINE LIQUOR LAW: see **TEMPERANCE**: **TOTAL ABSTINENCE**: ETC.

MAINOTES, *mī'nōts*: inhabitants of the mountainous dist. of Maina, in the Greek province of Laconia. They claim to be descendants of the ancient Spartans, whose land they occupy. They are a wild and brave race. While the Turks held possession of Greece, the M. were almost independent, and were prominent in the war for the liberation of Greece.

MAINPERNOR, n. *mān'pēr-nēr* [F. *main*, hand, and OF. *perner*; F. *prendre*, to take; *prise*, a taking: L. *prehendĕrĕ*, to take]: in law, a surety into whose hands a person charged with an offense was given to answer for his appearance when required. **MAIN'PRISE**, n. -*prīz*: see **MAINPRIZE**.

MAINPRIZE—MAINTENANCE.

MAIN'PRIZE, in English Law [see **MAINPERNOR**]: formerly a security by which the bailor or mainpernor took the party bailed under his own personal charge or friendly custody, giving security to produce him at the time appointed: the practice is now obsolete, and superseded by Bail (q.v.).

MAINS, n. plu. *mānz* [Norm. F. *manse*; mid. L. *mansus*, a country-house to which is attached a certain quantity of land: O.Scot. *manys*, a mansion, a palace (see **MANSE**)]: in *Scot.*, the farm attached to a mansion-house; a large farm with buildings of a superior class.

MAINTAIN, v. *mān-tān'* [F. *maintenir*, to maintain—from *main*, hand; *tenir*, to hold: L. *manu tenēre*, to hold by the hand]: to hold or preserve in some particular state or condition; to keep up; to defend; to vindicate; to support by argument; to justify; to support with food, clothing, etc.; to support the expense of; to affirm or assert, as an opinion or doctrine. **MAINTAIN'ING**, imp. **MAINTAINED'**, pp. *-tānd'*. **MAINTAIN'ER**, n. *-ēr*, one who. **MAINTAIN'ABLE**, a. *-ā-bl*, that may be maintained or upheld. **MAINTENANCE**, n. *mān'tēn-āns*, means of support; sustenance; vindication; defense; continuance. In *law*, assistance to another in a suit by one who has no interest in it; illegal suecoring of a person, as by lending money to a stranger to carry on a lawsuit. But it is legal for persons whose relationship is recognized by law to give aid to or receive aid from each other; e.g., a father may aid his son, a landlord his tenant. A lawyer may give professional but not pecuniary aid. The laws against maintenance are not now so strict as of old; e.g., a contract between lawyer and client to share the sum recovered in a suit now holds good. See **CHAMPERTY**, or **CHAMPARTY**.—**SYN.** of 'maintain': to assert; allege; support; sustain; hold; keep; keep up; uphold; continue; preserve.

MAIN'TENANCE, **CAP OF** (sometimes called *Cap of Dignity*): cap of crimson velvet lined with ermine, with two points turned to the back, originally worn only by dukes, but afterward assigned to various families of distinction.



Cap of Maintenance.

Those families who are entitled to a cap of maintenance place their crests on it instead of on a wreath. According to Sir John Fearn, 'the wearing of the cap had a beginning from the duke or general of an army, who, having gotten victory, caused the chiefest of the subdued enemies whom he led to follow him in his triumph, bearing his hat or cap after him, in token of subjection and captivity.' Most of the reigning dukes of Germany, and various families belonging to the peerage both of England and of Scotland, bear their crests on a cap of maintenance.

MAINTENON.

MAINTENON, *mǎng-téh-nōng'*, FRANÇOISE D'AUBIGNÉ, Marquise DE: 1635, Nov. 27—1719, Apr. 15; b. in a prison at Niort (her father being a Huguenot); daughter of Constant d'Aubigné and of Jeanne de Cardillac, and grand-daughter of Théodore Agrippa d'Aubigné, well-known for his writings, his attachment to Protestantism, and his energetic character. On obtaining his release, he went (1639) with his wife and daughter to Martinique in the W. Indies, where he died in poverty 1645. After her father's death, Françoise returned, with her mother, a fervent Rom. Catholic, to France; and her mother in her poverty yielded the child to her husband's sister, who converted her to Protestantism; whereupon an order of state issued, committing her to the charge of her god-mother. All means were used—even personal indignity—for her re-conversion to the Rom. Cath. religion; and this was accomplished when she was about 14 years of age—after an obstinate resistance, in which the brave little girl, to use her own words, *fateguait les prêtres la Bible à la main*. It is remarkable what a zealot she afterward became. The Chevalier de Meré, noticing her penniless condition after the death of her mother 1650 (when the small pension, which had been all their support, ceased), introduced her to Scarron (q.v.), the noted wit and the centre of the literary society of the day. He was struck by her beauty, intelligence, and helpless condition, and offered her his hand, or, if she should prefer it, a sum of money sufficient for her entrance into a nunnery. Although Scarron was lame and deformed, she chose to marry him, and went to live in the midst of the refined and intellectual society which frequented the house of the poet. She was his devoted nurse, and an excellent wife for nearly 10 years. On his death, 1660, she was reduced to great poverty, and proposed to go as a governess to Portugal, when Madame de Montespan (q.v.) obtained her a pension from the king. Four years afterward, she was intrusted with the education of the two sons whom Madame de Montespan had borne to Louis XIV., and in this capacity evinced a patient tenderness and sleepless care such as are expected only from a mother; and now becoming acquainted with the king, soon fascinated him, so that he bestowed on her 100,000 livres, with which she bought the estate of Maintenon; and in the course of events she supplanted Madame de Montespan. It is difficult to describe her relation to the king. She was not, it is believed, his mistress in the ordinary sense of the term; but from that time to the end of his life, she exercised extraordinary ascendancy over him; and Louis XIV. was privately married to her 1686, Jan., by the abp. of Paris (this date is given by Voltaire). She had a passion for being thought 'a mother of the church;' but while she confessed the strength of her desire to Romanize the Huguenots, she earnestly denied that she approved of the detestable *dragonnades*. She was much disliked by the people, but the courtiers sought her favor, and her crea-

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tures were made ministers and generals. Her influence was on the side of decency in that wildly dissolute court. The ministers discussed with her the business to be brought before the king, and their conference with him was usually in her presence. She had decisive influence in all details of action and in minor policies; but it is doubtful if large and continuous lines of policy were usually adopted at her behest. In the midst of splendor, and in the possession of great power, she was confessedly very unhappy. She carefully brought up the children of Madame de Montespan; and it was at her instigation that Louis attempted to legitimize them. When he died 1715, she retired to the former Abbey of St. Cyr, which, at her wish, had been changed, 30 years before, into a convent for young ladies, and here she died. She received, to the end of her life, the honors of a king's widow. Her pretended memoirs are spurious, but her *Lettres* (9 vols. Amst. 1756, etc.) are genuine. By far the best edition is that published by M. Lavallée (1854 et seq.), entitled *Œuvres de Mme de Maintenon publiées pour la première fois d'après les Manuscrits et Copies authentiques, avec un Commentaire et des Notes*.

MAINZ, *mînts*, or MENTZ, *měnts* (Fr. MAYENCE, *mâ-yöngss'*, anc. *Moguntiacum*): most strongly fortified city in the German empire in 50° n. lat., and 8° 10' e. long., in one of the most fertile of the wine-bearing districts of Germany; on a gentle slope on the left bank of the Rhine, near the junction of the Main. Pop. (1871,) 53,918, including the garrison; (1900) 84,251. A floating bridge, resting on 49 pontoons, connects M. with the Rhenish village of Castel; as also a handsome railway bridge of iron, finished 1864. The fortifications, extending nearly 10 m., consist of 14 principal, and numerous lesser bastions, in addition to the four forts of Castel, Mars, Montebello, and Petersaue. In accordance with a decree of the Congress of Vienna, M. was surrendered to the grand duchy of Hesse-Darmstadt 1814, on condition that it was to constitute a German federal stronghold, and be garrisoned in common by Austrian, Prussian, and Hessian troops. In 1866, it became a Prussian fortress, and Prussia obtained all the rights that had hitherto belonged to the German Confederation. By the treaty at Versailles, 1870, Nov. 15, the fortress of Mainz was declared an imperial fortress. M., which is one of the most ancient cities of Germany, retains many evidences of mediæval taste, and consists principally of narrow crooked streets; but of late years a new town has sprung up on the site of the ancient Roman city, and numerous sanitary improvements have been effected under joint direction of the grand-ducal and civic authorities. M. has one Prot. and ten Rom. Cath. churches, among the latter of which the most noteworthy are that of St. Ignacius with its beautifully painted roof, and the cathedral, a memorable building, begun 978, six times destroyed by fire or through war, and restored by Napoleon. It has one great tower, 400 ft. in height, and 6 lesser tow-

ers, 14 altars, and 20 minor chapels. M. possesses numerous Roman remains, the most remarkable of which are the *Eichelstein*—a mass of stones supposed to be a memorial erected in honor of Drusus—and the ruins of a vast aqueduct at Zalbach. M. has a gymnasium, a seminary for priests, a normal school, a picture-gallery, museums, and a public library of about 100,000 vols. Among the industrial products which include artificial pearls, isinglass, tobacco, vinegar, soap, carriages, musical instruments, furniture, and articles in leather, the first and the last have acquired special reputation. M., from its position, necessarily has a very important transit-trade, both by railway and river steam-navigation; and since the abrogation of many onerous restrictions, it has become one of the great internal ports for the corn and wine trade. The history of M. connects it with Rome from B.C. 13, when Drusus built on its site the castle of *Maguntiacum*; but it owes its real importance to Charlemagne. It has acquired celebrity as the birth-place of Gutenberg (q.v.). In the 13th c. M. was head of the confederacy of Rhine cities: 1468 the city was added to the domains of the archbishops of M., who as such had precedence among the spiritual prince-electors of the empire. M. was several times in the possession of France, notably 1801–14.

MAIPURES, or MAYPURES, *mā-pô'rās*: tribe of Indians in S. America, comprising the M. proper, Caveres, Guaypunalis, Pareni, Moxos, and other families. They occupied the region of the upper Orinoco and Negro rivers, nearly all were cannibals and constantly at war with each other, and, excepting the Moxos—who had been conquered by a Peruvian inca—resisted Christianity and civilization. Several grammars and vocabularies of the Moxos group were compiled by Rom. Cath. priests about 1701; but the missions established among them were destroyed by the Portuguese 1742.

MAISONNEUVE, *mā-zōng-név'*, JULES GERMAIN FRANÇOIS: surgeon: b. Nantes, France, 1810. He was educated in Paris; graduated in medicine 1835; was lecturer and surgeon in the Hôtel Dieu, Hôpital Cochin, and Hôpital Pitié; received the cross of the Legion of Honor 1848; attained wide repute for his bold operations and discoveries in surgical science; and published a number of standard technical works, including *Le Perioste et ses Maladies* (1839); *De la Coxalgie* (1845); *Sur les Kystes de l'Ovaire* (1848); *Mémoire sur une nouvelle méthode de Catheterisme* (1855); *Clinique chirurgicale*, 2 vols (1863-4); and *Mémoire sur les Intoxications chirurgicales* (1867).

MAISONNEUVE', PAUL DE CHOMEDÉY, Sieur DE: d. 1676, Sep. 9; b. Champagne, France: founder of Montreal. He entered the French army when 13 years old: was sent to Canada in charge of three ship loads of colonists 1641: founded Montreal 1642, May; was appointed its first gov. and held the office till 1644, June: was re-

moved and sent to France through jealousy of his popularity; and was pensioned by the Seminary of Paris.

MAISTRE, *mâtr*, JOSEPH, Comte DE: 1754, Apr. 1—1821, Feb. 26; b. Chambéry, of noble French family, which had settled in Savoy. While Savoy was occupied in 1792 by the French, M., who was a member of the senate, withdrew from the country; and when the king of Sardinia, 1799, was compelled to retreat to the island of Sardinia, M. accompanied his court, and 1803 was sent as ambassador to St. Petersburg. In this post he remained until 1817, when he was called to a place in the home government, and resided in Turin till his death. M. was an ardent advocate of legitimacy, and in his later career became the ablest and one of the most eminent writers of the new conservative school in politics and of the ecclesiastical absolutist school in religion. He had profound learning, and high rhetorical power, but his great strength was in his skill for masterly and logical argument. The key to his whole position in philosophy and in sociology was his profound conviction of the indispensable necessity that the pope should be supreme as well over all national churches and all temporal powers as over all individual private judgment. Without this M. could see no possibility of order on earth. He had obtained some reputation as a writer at a very early period. His first work of note, *Considérations sur la France*, appeared 1796. His later works were written either at St. Petersburg or after his return to Turin. They are—*Essai sur le Principe Générateur des Constitutions Politiques* (St. Petersburg 1810); *Du Pape* (Lyon 1821); *De l'Eglise Gallicane* (Paris 1821–2); *Soirées de St. Petersburg* (2 vols. 1822): and a posthumous work, *Examen de la Philosophie de Bacon* (Paris 1836).—Joseph's younger bro., Comte XAVIER DE M. (1763–1852; b. Chambéry), was a soldier, who rose to be maj.gen. in the Russian service: he was also an elegant writer in light literature. His *Voyage autour de ma Chambre* is much admired; also *Le Lépreux de la Cité d'Aoste*.

MAITLAND, *mât'land*: town of New South Wales, county of Northumberland, on the Hunter river, 95 m. n. of Sydney; 20 m. n.w. of Newcastle, to which it is joined by railway. It is divided by the river into E. and W. Maitland, which are separate municipalities. In either division are handsome banks, churches, and other public buildings. In West M. (much the more populous part of M.) are several coach-building factories, tobacco manufactories, and three mills (including a paper-mill). Good coal abounds in the neighborhood. The district has been called the 'Granary of New South Wales.' Pop. of both divisions (1881) 7,300; (1891) 10,214; (1901) 10,073.

MAITLAND, JOHN, Duke of LAUDERDALE: 1614–1682, Aug. 24; b. at the ancient family seat of Lethington; grandson of John, first Lord Thirlstane (who was bro. of the former secretary of Lethington); and great-grandson of Sir Richard M. He received an excellent education, be-

ing skilled, according to Bp. Burnet, in Latin, Greek, Hebrew, history, and divinity, was carefully trained in Presb. principles, and entered public life as a keen and even fanatical Covenanter. In 1643, he attended the Westminster Assembly of Divines as an elder of the Church of Scotland, and was a party to the surrender of Charles I. to the English army at Newcastle. Soon afterward he changed his politics altogether, and became a decided royalist. When Charles II. came to Scotland from Holland, Lauderdale accompanied him; but was taken prisoner at the battle of Worcester 1651, and was in captivity nine years. Set at liberty by General Monk, he hastened to the Hague 1660, and was warmly received by Charles. After the removal of Middleton 1662, and of Rothes 1667, Lauderdale was practically the sole ruler of Scotland, and for some time showed moderation, and an apparent regard for the religious feelings of his countrymen; but he soon became a bitter persecutor, sent multitudes of the Covenanters 'to glorify God at the Grassmarket,' and repelled in blasphemous language the remonstrances which many distinguished persons ventured to make. In 1672, Charles showed his appreciation of the Earl of Lauderdale's conduct by creating him Marquis of March and Duke of Lauderdale; two years afterward, he was raised to the English peerage as Viscount Petersham and Earl of Guilford, and received a seat in the English privy council. He was one of the famous 'Cabal;' but having, by his domineering arrogance, excited the disgust and hatred of his colleagues, as well as of the nation, he fell into disgrace, and was stripped of all his offices and pensions 1682, the year of his death. Lauderdale, according to Burnet, 'was in his principles much against popery and arbitrary government,' and his infamy consists in his shameless sacrifice of his convictions to his interests. He was a rude, blustering, passionate man, with what the Duke of Buckingham called a 'blundering understanding.' Burnet gives a picture of his appearance: 'He was very big, his hair red, hanging oddly about him. His tongue was too big for his mouth, which made him bedew all that he talked to; and his whole manner was very unfit for a court.'

MAITLAND, Sir RICHARD OF LETHINGTON: Scottish lawyer and poet: 1496-1586; the first distinguished member of a family which became celebrated in literary and political history. He studied at St. Andrews and in France, and on his return to Scotland was successively employed by James V., the Regent Arran, and Mary of Lorraine. About 1551-2, he received knighthood, became a lord of the court of session 1561 (before which, however, he had the misfortune to lose his sight), and lord privy seal 1562. M. was one of the best men of his time, conspicuous for moderation and integrity in an age of violence, fanaticism, and perfidy. A complete ed. of M.'s original poems was published first 1830 (1 4to vol.) by the Maitland Club, a soc. of literary antiquaries named from him. His collection of early Scottish poe-

MAITLAND—MAITREYA.

try (in two ms. vols., the first containing 176, and the second 96 pieces) is preserved in the Pepysian Library, Magdalene College, Oxford.

MAITLAND, WILLIAM: better known as 'Secretary Lethington,' about 1525-1573, June 9; eldest son of Sir Richard M. of Lethington. Like his father, he was educated both at St. Andrews and on the continent. He became a convert to the Reformed doctrines about 1555. but could not have been a violent partisan, since in 1558 he was appointed sec. of state by Mary of Guise. In the following year, however, he openly joined the lords of the congregation, and was one of the Scotch commissioners who met the Duke of Norfolk at Berwick, to arrange the conditions on which Queen Elizabeth would give them assistance. In 1561, after the arrival of Queen Mary from France, he was made an extraordinary lord of session. He strongly objected to the ratification of Knox's *Book of Discipline*, and 1563 conducted the prosecution against Knox for treason; from this time appearing to have left the Reformers. In 1564, he held a long debate with Knox on the claims of the Reformed Church to be independent of the state. In 1566 he took part in the conspiracy against Riccio, after whose assassination he was proscribed, and obliged to seek shelter in obscurity. He was, it is believed, cognizant of Bothwell's scheme for the murder of Darnley; yet, when he saw the hopeless nature of Bothwell's designs, he immediately joined the confederacy of the lords. While Mary was still a prisoner at Loch Leven, he is said to have written to her, offering his services, yet he was present at the coronation of King James VI., 1567; and though he secretly aided in the escape of the queen, he fought against her on the field of Langside. In 1568 he accompanied the Regent Moray to the conferences held at York regarding the Scottish queen; but even here he tried to further her interests, and is said to have been the first to propose to the Duke of Norfolk a union between him and Mary. The Scottish lords now felt that he was a dangerous enemy to the commonwealth, and 1569 he was arrested at Stirling, but was soon liberated by an artifice of Kirkaldy of Grange. After the murder of the Regent Moray, he and Kirkaldy became the forlorn hope of the captive queen, in consequence of which he was declared a rebel, deprived of his offices and lands by the Regent Morton, and besieged with Kirkaldy in Edinburgh Castle, by the regent and an English force. After long resistance, the castle surrendered; Kirkaldy was put to death, and M. died a prisoner at Leith, 'some,' says Melville, 'supposing he took a [poison] drink and died, as the auld Romans were wont to do.' Buchanan has drawn his character with a severe pen in his Scottish tract *The Chameleon*.

MAITREYA: according to the Buddhists, a Bodhisattwa, or a man of pre-eminent virtue and sanctity; disciple of the Buddha Sâkyamuni. He is classed in their mythology among the gods called Tushitas, or 'the

happy,' and has generally the epithet *Ajita*, or 'unconquered.' The Buddhists believe that he will become incarnate as their future Buddha. In Tibetan, he is called Jampa. A faithful representation of this Buddha, surrounded by the (Tibetan) goddesses Dolma, the Mantas or Buddhas of medicine, two ancient priests, and various saints, is in the atlas of Emil Schlagintweit's *Buddhism in Tibet* (London and Leipzig 1863), where an interesting sketch is given (p. 207, ff.) of the characteristic types of Buddha images, and of the measurements of Buddha statues by the author's brothers in India and Tibet.

MAIZE, *māz*: see MAZE 2 for the correct spelling.

MAIZE, n. *māz* [Sp. *maiz*; F. *mais*—from *mahiz*, native word of the island of Hayti]: Indian corn, an Amer. corn-plant, the *Zēa mays*, ord. *Gramīnēæ*: name also of a genus of grasses, having monœcious flowers; the male flowers forming a loose panicle at the top of the culm; the female flowers in axillary spikes, inclosed in large tough spathes, from which only the extremely long styles—in the common species 6–8 inches long—hang out like tufts of feathers or silken tassels. The grains are large, roundish, compressed, naked, and arranged in parallel rows along the upright axis of the spike.—A species of M., called CHILI M., or VALPARAISO CORN (*Z. Curagua*), is distinguished by its serrated leaves. It is a smaller plant, native of Chili, and has won a superstitious regard, because its grains when roasted split in the form of a cross.—See INDIAN CORN.

MAIZE BEER: see CHICA.

MAJESTY, n. *māj'ēs-tī* [OF. *majestet*; F. *majesté*—from L. *majestātem*, grandeur, majesty—from *majus* for *magnus*, great]: greatness of appearance; dignity; grandeur; elevation of manner or style; sovereignty; title or address of kings or emperors (see below). MAJESTIC, a. *mā-jēs'tīk*, or MAJES'TICAL, a. *-tī-kāl*, statcly; elevated; sublime; having dignity of person or appearance. MAJES'TICALLY, ad. *-lī*.—SYN. of 'majestic': grand; magnificent; splendid; royal; regal; dignified; lofty; imperial.

MAJESTY: title of honor now usually bestowed on sovereigns. Among the Romans, *majestas* denoted the power and dignity of the people; and the senatorial, consular, or dictatorial M. was spoken of, in consequence of these functionaries deriving their power from the people. After the overthrow of the republic, *majestas* became exclusively the attribute of the emperors, *dignitas* being thenceforth that of the magistrates. The *majestas* of the emperors of Rome was supposed to descend to those of Germany as their successors; but the adoption of the attribute M. by other European sovereigns is of comparatively late date. Its use began in England in the latter part of the reign of Henry VIII., till which time 'Your Grace' or 'Your Highness' had been the appropriate mode of addressing the sovereign. Henry II.

was the first king of France similarly styled, and Louis XI. and his successors became entitled, in virtue of a papal bull, to call themselves by the title of 'Most Christian Majesty.' Ferdinand and Isabella of Spain similarly obtained for themselves and their successors the title of 'Most Catholic Majesty;' and Stephen, Duke of Hungary, and Maria Theresa, of 'Apostolic Majesty.' The emperor of Austria is now styled his Imperial Royal Majesty; in German, 'K. K. (abbreviated for 'kaiserliche königliche) Majestät.' Emperors, kings, and queens are now generally addressed as 'Your Majesty,' not including the sultan of Turkey, whose proper style is 'Your Highness.' The sovereign of the United Kingdom is personally addressed as 'Your Majesty;' and letters are addressed to 'The King's' or 'Queen's' 'Most Excellent Majesty.'—In *heraldry*, an eagle crowned, and holding a sceptre, is blazoned as an 'eagle in his majesty.'

MAJOLICA, n. *mă-jöl'ĩ-kă* [It. *majolica*, delf-ware: comp. O.Ger. *magele*, a mug]: term for soft enamelled pottery, introduced into Italy from *Majorca* about the 12th c.—probably named from the island. Subsequently, when a large manufacture of the same kind of earthenware was carried on at Faenza, the name M, was dropped, and 'Faience' substituted.—The term is now used also to designate vessels of colored clay, coated with a white opaque varnish, so as to resemble artistic 'faience.' See POTTERY: also Fortnum's *Maiolica*, 1875.

MAJOR, a. *mă-jér* [F. *major*, a major; *majeur*, greater—from L. *majōrem*, greater]: greater in number, quantity, or extent: N. officer in rank above a capt. and below a lieut.col. (see MAJOR, in the Army): a head or superior; a person of full age. MAJORSHIP, n. the office or rank of major. MAJORITY, n. *mă-jör'ĩ-tĩ*, full age or end of minority (see below): the greater number; more than a half; the number by which the votes for the successful candidate exceed those of the unsuccessful one; the military rank of a major; in *OE.*, first rank. MAJOR-DOMO, *-dō'mō* [It. *major-domo*, a steward: Sp. *mayor-domo*—from L. *major*, greater; *domus*, a house]: a man who holds the place of the master of a house; a steward. MAJOR-GENERAL, an officer next in rank below a lieutenant-general; an officer of the lowest grade of permanent general officers. DRUM-MAJOR, the principal drummer in a regiment. SERGEANT-MAJOR, a non-commissioned officer subordinate to the adjutant. MAJOR INTERVAL, or MAJOR, in *music*, interval greater by half a tone or semitone than the minor interval of the same denomination; major intervals are those susceptible of being lowered a semitone without becoming false (see INTERVAL, in Music). *Major* is applied, however, chiefly to the mode, key, or scale. MAJOR MODE, in *music*, that mode in which the third and sixth tones of the scale form major intervals with the tonic or key-note; otherwise, when the intervals between the third and fourth, and seventh and eighth, of the scale are semitones: the mode, key, or scale, is said to be in the major

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when the third above the key-note is a major third—i.e. when it is distant from the key-note four semitones; thus, C C \sharp D D \sharp E. MAJOR PREMISE, in *logic*, the pre-



mise of a syllogism which contains the major term. MAJOR TERM, the term of a syllogism which forms the predicate of the conclusion.

MAJOR, in the Army: lowest field-officer in the U. S. army. He ranks above a capt., and next below the lieut.col., and commands in his absence; is mounted; and is responsible, with the adjutant, that the men are properly drilled and equipped.—Used adjectively, the word *major*, in the army, signifies a superior class in a certain rank, e.g., sergeant-major, who is a superior sergeant; except in the case of general officers, in which its signification is arbitrarily limited to major-general, the third of the four classes of generals.

MAJORCA, *ma-jawr'ka* (Spanish, *Mallorca*): largest of the Balearic Isles (q.v.); 107 m. s.e. of the mouth of the Ebro, the nearest point of the Spanish coast, and 171 m. n. of Algiers. Its greatest length (e. to w.) is 64 m., and its breadth (n. to s.) 48 m.; 1,430 sq. m. The n.e. half of the island is mountainous, with the highest summit 4,600 ft. above the sea. The other parts are beautifully diversified with hills, valleys, and plains. The climate is healthful, the sea-breeze preserving a nearly equable temperature over the whole island. The inhabitants, who much resemble the Catalans in their appearance and manners, are hospitable and industrious; they are also superstitious, and many are uneducated; but crime is rare. They employ themselves mostly in agriculture. The chief products of the island are marble, slate, plaster, the common cereals and legumes, oranges, silk, lemons, oil, wine of excellent quality, olives, and aromatic herbs. The chief town is Palma (q.v.), the capital. The Spanish govt. makes use of M. as a place of banishment for political offenders.—Pop. (1887) 233,650.

MAJORITY, in Age: age at which a person acquires the status of a person *sui juris*—i.e., is able to manage his or her own affairs. This age, in the United States and in Great Britain is 21 years. Under that age, persons are called minors, or (legally) infants, and are more or less subject to guardians, who manage for them their property. It is chiefly with respect to the management of property that the distinction of M. exists, as it is assumed that persons under that age have not discretion and firmness to enter single-handed into contracts. It is also a common period fixed in wills at which to make provisions payable. As far as liability for crime is concerned, M. makes no difference, for all persons are capable of crime, when they have discretion enough to know that particular acts are criminal; but an infant under 7 years is conclusively presumed incapable of felony. Between the ages of 7 and 14, capacity in each case must be

proved; above 14, it is presumed unless disproved. The period of full M. is the same in both sexes; but a young man can legally make a will of personal property at 18, and a young woman at 16 years of age. See INFANT, in Law.

MAJUBA (*mâ-jû'bâ*) HILL: an eminence in the extreme n. of Natal, Africa; the scene of the defeat of 648 British troops, with the loss of their leader, Sir George Colley, by a superior force of Boers, 1881, Feb. 27. On the anniversary of the disaster, 1900, Feb. 27, Lord Roberts received the surrender of the Boer commander, Gen. Cronje, with 4,000 men.

MAJUSCULÆ, n. *ma-jûs'kû-lē* [L.]: capital letters used in old Latin manuscripts; majuscles. MAJUSCULE, n. *-kûl* [L. *majuscula* (*litera*, letter, understood)—from *majusculus*, somewhat great, dim, from *major*, *majus*, greater]: a capital letter, as distinguished from a minuscule; such letters are found in Latin manuscripts of the 6th c. and earlier.

MAKART, *mâ-kârt'*, HANS: 1840, May 28—1884, Oct. 3; b. Salzburg, Austria: painter. He was educated in the Vienna Gymnasium; began studying painting in the Vienna Art School, but was soon dismissed for incapacity; became a pupil of Piloty in Munich 1861; and completed his first painting, *Lavoisier in Prison*, 1862. He subsequently made art-journeys to Paris, London, and Rome; began exhibiting 1866; settled in Vienna in a studio provided for him by the emperor; spent the winters of 1875,6 in Egypt; and designed and arranged the historical procession in honor of the emperor's silver wedding 1879, Apr. 24. His paintings include *The Afternoon Entertainment of Noble Venetians* (1863); *Falstaff in the Washbasket*; *The Knight and the Water-Fairies*; *The Plague in Florence*; *Modern Amorettes* (1868); *Abundance* (1870); *Catharine Cornaro* (1873); *The Five Senses* (1879); *The Chase of Diana* (1880); *The Entry of Charles V. into Antwerp*; *Messalina*; *Judith*; and *Nile Hunt*. He became insane two months before his death.

MAKE, v. *māk* [Ger. *machen*; Dut. *maecken*, to make]: to form; to fashion; to mold; to compel; to produce or effect; to do; to perform; to cause to have a particular quality; to bring into any state or condition; to secure from distress; to establish in comfort and happiness; to raise, as profit; to gain; to reach or arrive at; to proceed; to move; to operate; to contribute; in *OE.*, to travel; to tend: N. form; structure; composition. MA'KING, imp.: N. the act of forming or constituting; workmanship; composition; structure; form. MADE, pt. pp. *mād* [corrupted from *make-ed*]: did make. MA'KER, n. *-ēr*, one who makes; the Creator. To MAKE ACCOUNT OF, to esteem; to regard. To MAKE A MAN, to make the fortune of a person. To MAKE AS IF, to pretend; to make show that. To MAKE AWAY OR To MAKE AWAY WITH, to kill; to destroy. To MAKE AWAY, to remove or transfer; to travel. To MAKE BOLD, to take liberty; to dare. To MAKE FOR, to move toward. To MAKE FREE WITH,

MAKE—MAKRIZI.

to treat without ceremony. To MAKE GOOD or MAKE AMENDS, to defend; to maintain; to compensate for. To MAKE LAND, to arrive near or at land, as a ship. To MAKE LIGHT OF, to treat with indifference or contempt. To MAKE LOVE TO, to attempt to gain the affections of; to court. To MAKE MERRY, to be joyful or jovial in feasting. To MAKE MUCH OF, to treat with fondness or esteem. To MAKE NO DOUBT, to have no doubt; to be confident. To MAKE OF, to understand; to effect. To MAKE OFF, to run away; to decamp. To MAKE OUT, to form or draw out; to understand clearly. To MAKE OVER, to transfer; to alienate. To MAKE SAIL, to increase speed by extending more sail. To MAKE SHIFT, to contrive to do. To MAKE SUIT TO, to endeavor to gain the favor of; to court. To MAKE SURE OF, to consider as certain; to secure to one's possession. To MAKE UP, to collect into a sum or mass; to constitute a sum or total; to reconcile; to compensate; to settle or adjust. To MAKE UP FOR, to supply by an equivalent; to compensate. To MAKE UP WITH, to become friendly to. To MAKE WAY, to make progress; to advance; to permit to pass. MAKE-BELIEVE, a. fictitious: N. a. mere pretence. A MAKE-PEACE, a peace-maker; one who endeavors to reconcile. MAKE-SHIFT, a temporary substitute; something adopted or constructed to serve a present purpose. A MAKE-UP, the fictitious representation of a thing; a thing not real or genuine; costume. MAKE-WEIGHT, any small thing thrown in to make up weight. *Note.*—The very many senses of MAKE are determined by the context.—SYN. of 'make, v.': to compose; effect; practice; hold; keep; suffer; incur; force; constrain; reach; arrive at; give; represent; show; fasten; bar; create; cause; occasion; produce; constitute.

MAKE, n. *māk* [AS. *maca* or *gemaca*, a companion: Icel. *maki*, a spouse: Norw. *makje*, a mate]: in OE., a mate; a consort; a match; a friend; an equal. MAKE-LESS, a. *-lēss*, in OE., deprived of a mate, or in want of one; not having a match.

MA'KI: see LEMUR.

'MAKIAN, *mâ-kē-ân'*: one of the Moluccas (q.v.).

MAKO, *mōh-kō'*: market-town of Hungary, on the right bank of the Maros, 16 m. e.s.e. of Szegedin. The town contains numerous mills, and is famous for its breed of oxen, which are of unusually large size. Pop. (1880) 30,063, of whom many are Jews; (1900) 33,722.

MAKRIZI, *mâ-krē'zē*, TAKI EL-DIN AHMED IBN ALF EL: Arabic historian and geographer: prob. 1364–1441; b. Cairo; of a family from Makriz, near Baalbec. He studied history, jurisprudence, tradition, astrology, etc., at Cairo, where also he afterward held the offices of mohtasib, or inspector of weights and measures, and of khatib and imam at different mosques. The most important of his numerous works are a *Topographical History of Egypt*, (2 vols. folio, Bulāk A.H. 1270 = A.D. 1854), a *History of the Mamluk Sultans*; and two treatises on Moslem (Ku-

MAL—MALABAR RĀṬ.

fic) coins, weights, and measures, edited and translated by Tychsen (into Latin), and by Silvestre de Sacy (into French). His History of Egypt is elaborate, interesting, and valuable. M.'s works are merely compilations, but his learning was vast, and he had good judgment and was a careful observer.

MAL, *māl*, or MALE, *māl'ē* [F. *mal*, evil, ill—from L. *malē*, badly, ill; *mālūs*, bad, evil]: a prefix signifying, evil; ill; badly—as in *malformation*, *malediction*.

MALABAR, *māl-a-bār'*: district in the Madras presidency, India; lat. 10° 15'—12° 18' n., long. 75° 14'—76° 52' e.; bounded n. by South Kánara, e. by Coarg, the Nél-giri hills, and Coimbatore district, s. by the states of Cochin and Travancore, w. by the Arabian Sea; extreme length 145 m., breadth 25–70 m.: 5,763 sq. m.; cap. Calicut. The surface of the country is much diversified. The coast runs s. e., and has a few headlands and small bays, and an excellent natural harbor at Cochin. With few exceptions the shore is skirted by a low sandy strip 1–3 m. broad, covered with luxuriant groves of cocoanut trees. From this strip the surface rises to the great range of the western Gháts—3,000 to 7,000 ft. high—which forms the e. boundary, the interval being distinguished by long spurs, extensive ravines, dense forests, and tangled jungle. The country is watered by the Beliapatam, Kota, Mahe, Beypur, Kadelundi, and Ponáni rivers, and inland navigation is augmented by artificial canals connecting the principal lagoons or backwaters. In 1880–1 there were 926,359 acres under cultivation, and 2,869,965 were returned as cultivable. Rice, which forms the chief food crop, occupied 580,281 acres. Coffee, pepper, spices, ginger, arrowroot, cocoanuts, timber—especially teak—and salt fish lead the exports, which 1880–1 were more than \$700,000. The chief seats of commerce are Calicut, Cannanore, Tellicherry, Cochin, Palghát, and Badagara; European banks are represented at Calicut, Cochin, and Tellicherry; the principal educational institutions are at Calicut, Tellicherry, Palghát; and large printing establishments are at Calicut and Cochin. Manufacturing is almost confined to cloth weaving and brick and tile making at the mission stations at Calicut and Cannanore, and coarse cotton cloth and mat weaving at Palghát. There are 400 m. of railroad, beside many m. of well made and well kept wagon roads. The largest towns are Calicut, pop. 48,338; Palghát, 31,115; Tellicherry, 20,479; Cochin, 13,588; Cannanore, 10,265. Rom. Cath., Prot., and Syrian Christian churches and missions are numerous, and the native Christian pop. is steadily increasing. Pop. (1872) 2,261,250; Hindus 1,637,914; Mohammedans 581,609; Europeans 2,579; Eurasians 5,409; native Christians 32,280; Jains 31; others 1,428. (1881) 2,365,035, of whom more than two-thirds were Hindus, and one-fourth Mohammedans; (1891) 2,652,565.

MALABAR'RĀṬ: see BANDICOOT.

MALABATHRUM—MALACCA.

MALABATHRUM, *māl-a-bāth'rūm*: name given by the anc. Greeks and Romans to aromatic leaves which were in high repute among them, as medicine and as perfume, and with which they sometimes flavored wine. These leaves were brought from India, whence they were often called *Indian Leaves*; and from the value in which they were held, sometimes simply *Leaves*, just as the term *Bark* is now used for the medicinal bark of the *Cinchonas*. Many fabulous accounts were current of their origin. They are now almost certainly known to be the same with the leaves sold in every Indian bazaar under the name of *Tej-pat*, product of two nearly allied species of Cinnamon (*Cinnamomum Tamala* and *C. albiflorum*), growing in the dense forests of the Himalayan valleys; and the name *M.* is regarded as a corruption of *Tamala-putra*, *Tamala* leaf. They are aromatic, fragrant, and gently stimulant.

MALACCA, *ma-lāk'ka*: British maritime settlement on the s.w. coast of the Malay Peninsula, lat. 2° to 3° n., long. 102° to 103° e.; 40 m. in length, and, including the dist. of Naning, about 25 m. broad; about 1,000 sq. m. (For the *Peninsula* of Malacca, see **MALAY PENINSULA**.) Near the coast on the Strait of Malacca, the surface is flat and swampy, producing rice. Inland, there are low hills, Mount Ophir rising to 3,920 ft. Although there is little agriculture and the greater portion of the country is in the condition of jungle, the soil is fertile in rice, sago, pepper, fruits, vegetables, rattans, and timber. In the district of Naning are tin-mines of some value. The climate is remarkably salubrious; the land and sea breezes are regular; and the thermometer ranges from 72° to 85° , sometimes to 90° . *M.* was taken by the Portuguese under Albuquerque 1509; became a Dutch possession 1642; fell 1795 into the hands of the British, to whom it was finally ceded 1824. In 1867, *M.*, with Singapore and the Prince of Wales Island, was transferred from the control of the Indian govt. to that of the British colonial secretary. Pop. (1891) 90,950; (1901) 95,487.

MALACCA: town and seaport of *M.*, cap. of the dist. of *M.*; lat. $2^{\circ} 11'$ n., long. $102^{\circ} 16'$ e., at the mouth of a small river which flows into the Strait of Malacca. The harbor is shallow and this port has been outstripped in commerce by Singapore and Penang. It is handsome and well built, and presents a fine appearance from the sea. Its most interesting building is the church of our Lady del Monte, scene of the labors and supposed miracles of St. Francis Xavier, the 'Apostle of the East.' The people are of mingled nationalities, Malays, Chinese, mixed descendants of early Portuguese settlers, Arabs, and natives of India. Pop. variously estimated 5,000 to 20,000.

MALACCA, STRAIT OF: separating the Malay Peninsula on the n.e. from the island of Sumatra on the s.w.; length 520 m.; breadth varying from 25 m. at the s.e. to 200 m. at the n.w. extremity. In this strait are the British settlements of Singapore, Malacca, and Penang.

MALACCA-CANE, n.: a cane, used as a walking stick, imported from Malacca, though the tree producing it, *Calamus Scipionum*, is more common in Sumatra. Some are of a uniform rich brown, others mottled; the colors, it is said, are produced by smoke artificially applied.

MALACHI, *māl'a-kī* (probably abbreviated form of *Malachyah*, meaning 'messenger of Jehovah;' the Seventy and the Vulgate have *Malachias*): prophet who gives his name to the last canonical book of the Old Testament. Regarding this author nothing whatever is known; even early Jewish tradition is silent, though later legends are not lacking. Some have even doubted whether M. is a proper name or only an appellative; the Seventy, the Chaldee, Jerome, and many modern scholars—Vitringa, Hengstenberg, Umbreit, etc.—favor the view that it is an appellative—an ideal or official name. This is mere conjecture, and the arguments for it are weak. The period when M. composed this prophecy has been almost conclusively shown by Vitringa to have been during Nehemiah's second residence (as governor) in Jerusalem, about B.C. 433. The book of M. is cast somewhat in the form of a dialogue, and exhibits that strict regard for the proper observance of the ceremonial law, and that hatred of foreign marriages, etc., which marked the religious Jews after the return from exile; but is not as noticeable for prophetic fire, freedom, and dramatic force as were some of the earlier prophecies. Its place in the Scriptural canon has never been disputed, and is confirmed by several direct quotations in the New Testament.

MALACHITE, n. *māl'ā-kīt* [Gr. *malāchē*, a mallow]: highly prized mineral, essentially a green carbonate of copper—named from its color resembling that of the green leaves of mallows; used for a variety of ornamental purposes, and as a green pigment under the name emerald-green. It is found often as an incrustation or stalaetitic with other ores of copper; often in large masses, often also crystallized in rather oblique four-sided



Crystal of
Malachite.

prisms, bevelled on the extremities, or with the bevelling planes truncated to form six-sided prisms. It is often of fibrous structure. It is valuable as an ore of copper, though seldom smelted alone, not only because it is found with other ores, but because the metal is apt to be carried off with the carbonic acid. It is sometimes passed off in jewelry as turquoise, though easily distinguished by its color and much inferior hardness. It is used for many ornamental purposes; slabs of it—chiefly from the mines of Siberia—are made into tables, mantel-pieces, etc., of exquisite beauty. In 1835, a mass of solid M. was found in the Ural Mountains more than 17 ft. in length, weighing about 25 tons.

MALACHY—MALACOLOGY.

MALACHY, *mäl'a-kĩ*, SAINT (IMAR MALACHY), known also as *Maelmaedog Ua Morgair*, Archbishop of Armagh, and later, papal legate in Ireland: abt. 1094–1148; of noble family: saint of the Rom. Cath. Church, remarkable for his connection with a very important period of Irish church history, also from the fact of his biography having been written by his distinguished contemporary, St. Bernard. Having been educated by a hermit named Imar, he received orders at an early age from the hands of Celsus, Abp. of Armagh. His reputation for learning and sanctity was unexampled in that age, and Celsus had early designed M. as his successor in the see of Armagh; but M. protested against it, in consequence of an abuse similar to that of LAY IMPROPRIATION (q.v.), by which the temporalities of the see were held by laymen, called *Coarbs*. At length he was elected, with the full rights of his see, though burdened with a struggle to maintain them against the Leirs; and soon took measures for reform of the many abuses which prevailed in all the churches of Ireland. Having accomplished his work he claimed the privilege, which he had stipulated for, of retiring to his former small diocese of Connor, or rather to its poorer portion, the bishopric of Down. He went to Rome during the pontificate of Innocent II., and having in vain sought permission to resign his see, and retire to Clairvaux, returned to Ireland invested with extraordinary powers as legate of the pope. In this capacity he made a visitation of Ireland, and many of the controversies as to the ancient religious usages of the Irish Church turn upon this period. M. went a second time to France, 1148, to meet the pope, Eugene III., during his visit to that country, being deputed by the bishops of Ireland to ask from him the pallium for the abp. of Armagh; but before his arrival the pope had returned to Rome, and M., during a visit to his friend St. Bernard, at Clairvaux, was seized with an illness which ended in his death.—A 'Prophecy concerning the Future Roman Pontiffs,' is extant ascribed to Malachy. It designates, by a few brief phrases, the leading characteristics of each successive reign, and in some instances these descriptive characteristics have proved surprisingly appropriate. The characteristic of Pío Nono, *Crux de Cruce* (cross after cross), was the subject of much speculation. That the prophecy really dates from the time of M., no scholar now supposes; it was unknown not only to St. Bernard, but to all others until the 16th c. Neither Baronius nor any of his continuators deemed it deserving of attention.

MALACOLITE, n. *mäl'ä-kō-līt* [Gr. *malakos*, soft; *lithos*, a stone]: a mineral, a variety of augite of various shades of green, and of a vitreous or sub-pearly lustre.

MALACOLOGY, n. *mäl'ä-kōl'ō-jĩ* [Gr. *malakos*, soft, tender; *iogos*, a discourse]: the natural history of mollusks or soft-bodied animals. MAL'ACOL'OGIST, n. *-jĩst*, one versed in malacology.—*Malacology* in its proper sense was long neglected; Linnæus, and the naturalists

MALACOPTERYGIOUS—MALADMINISTRATION.

who preceded him, devoted some attention to this study; but until the time of Cuvier, the shells of the shell-bearing mollusks received a disproportionate share of attention, and the animals themselves were little regarded. Conchology (q.v.) has now sunk to a very subordinate place as a mere part of malacology, and this branch of science has been prosecuted during the 19th c. by many eminent naturalists with great zeal and success. The names of Oken, Savigny, De Blainville, Van Beneden, Milne-Edwards, and Owen, particularly are noticeable.

MALACOPTERYGIOUS, a. *māl'ă-kōp-tēr-īj'ī-ūs* [Gr. *malākos*, soft, tender; *pterugiōn*, a small feather, the fin of a fish]: having soft fin-rays, not sharp-pointed, as in certain fishes. **MAL'ACOPTERYG'II**, n. plu. *-īj'ī-ī*, or **MAL'ACOPTERYG'IIANS**, n. plu. *-īj'ī-ānz*, or **MALACOP'TERI**, *-tēr-ī*, or **MALACOP'TEROUS FISHES**, *-tēr-ūs*, one of the two primary divisions of Osseous Fishes in the system of Cuvier, distinguished by soft or spineless fins, the rays of which are jointed. Spiny rays are occasionally found in the first dorsal and the pectoral fins. Cuvier subdivided them into orders according to the position or absence of the ventral fins; *M. abdominales* having the ventral fins beneath the belly, as the salmon and herring; *M. sub-brachiati* having the ventral fins beneath the shoulder, as the cod and haddock; and *M. apodes* lacking ventral fins, as eels. Müller, however—followed in this by Owen and others—has separated from the M. an order of fishes to which he has given the name **ANACANTHUS** (*Anacanthini*; Gr. spineless), differing from acanthopterous fishes merely in the absence of spinous rays in the fins. Among the anacanthus are the important families *Gadidæ* (Cod, etc.) and *Pleuronectidæ* (Flat-fish).

MALACOSTEON, n. *māl'ă-kōs'tē-ōn* [Gr. *malākos*, soft; *ostēōn*, a bone]: softness of the bones; atrophy of bone.

MALACOSTOMOUS, a. *māl'ă-kōs'tō-mūs* [Gr. *malākos*, soft; *stoma*, a mouth]: having soft jaws without teeth, as some fish.

MALACOSTRACOUS, a. *māl'ă-kōs'tră-kūs* [Gr. *malākos*, soft; *ostrăkon*, a hard shell]: belonging to crustaceous animals, called by Aristotle **MAL'ACOS'TRACA**, *-tră-kă*, e.g., the shrimp, lobster, etc.: the Malacostraca are now classified as a sub-class of *Crustacea* (see **CRUSTACEANS**), and comprise two divisions *Edriophthalmata* (q.v.) and *Podophthalmata* (q.v.).—See also **INVERTEBRATE ANIMALS: LOBSTER: CRAB: SHRIMP**. **MAL'ACOS'TRACAN**, n. *-tră-kăn*, a crustacean. **MAL'ACOS'TRACOL'OGY**, n. *-kōl'ō-jī* [Gr. *togos*, a discourse]: the natural history of the crustacea.

MALADJUSTMENT, n. *māl'ăd-jŭst'mënt* [F. *male*, fem. cf *mai*, bad—from L. *malus*, evil, and Eng. *adjustment*]: an evil or wrong adjustment.

MALADMINISTRATION, n. *māl'ăd-mŭn'īs-trŭ'shŭn* [L. *malus*, evil, and Eng. *administration*]: bad management of public affairs; bad management of business which has been intrusted to one

MALADROITNESS, n. *māl'ă-droyt'nēs* [L. *mālus*, evil, and Eng. *adroitness*]: lack of dexterity; awkwardness.

MALADY, n. *māl'ă-dī* [F. *maladie*, disease—from *malade*, sick, ill—from mid. L. *malēaptus*, ill-disposed, then, sick—from L. *mālē*, badly, ill; *aptus*, attached]: any sickness or disease of the human body; depravity; moral disorder. *Note*.—The text is as given by Littré and Brachet, who also cite OF. *malabde*, Prov. *malapte*, sick, ill. Skeat, however, prefers the derivation of F. *maladie*—from L. *mālē-habitus*, out of condition—from *mālē*, badly, and *habitus*, held, kept. Skeat also cites from the L. Vulgate *mālē hābens*, sick.—**SYN.**: disease; disorder; distemper; sickness; ailment; illness; indisposition.

MALA FIDE, phrase, *mā'la fī'dē* [L.]: in bad faith; deceitfully, treacherously.

MALAGA, n. a. *māla'-ga*: a wine imported from *Malaga*, in Spain; also applied to raisins.

MALAGA, *māl'a-ga*, Sp. *mā'lâ-gâ*: modern maritime province of Spain, formed from part of the anc. kingdom of Granada (q.v.); bounded n. by Seville and Cordova, e. by Granada, s. by the Mediterranean Sea, w. by Cadiz; 2,823 sq. m.; cap. Malaga. The surface rises sharply from the sea to the Sierras of Alhama, Abdalajis, Axarquia, Ronda, Mijas, Tolox, and Bermeja, some of whose summits are more than 7,000 ft. above sea-level. The principal rivers are the Guadalhorce, which rises in the Sierra de Alhama, flows through the beautiful vale of M., and empties into the Mediterranean Sea near the cap. city; and the Guadiaro, nearly all of which is within the province. Owing to the broken nature of the surface, the means of internal communication are inadequate for travel and trade. The province is traversed n. to s. by the Cordova-Malaga railroad, and a branch line has been constructed from Bobadilla to Granada. Lead, nickel, and iron are plentiful in the mountains; thermal springs of sulphuretted hydrogen are found at Carratraca; lead, wine, raisins, grapes, oranges, lemons, figs, olive-oil, and almonds are largely exported; and coal, codfish, timber, pig-iron, hardware, and machinery are imported. In 1879 the export of olive oil was 1,400,000 gallons, chiefly to Baltic ports. In 1880 the wine production was about 5,250,000 gallons, of which 1,575,000 were exported; export of muscatel raisins 1,864,000 boxes (25 lbs. each), 35,500 frails (25 lbs. each), and 15,000 barrels (50 lbs. each), more than half of which came to the United States; export of lemons 50,000 boxes, oranges 21,500 boxes, muscatel grapes 20,000 barrels. The ravages of the phylloxera a few years ago induced many grape growers to undertake sugar-cane culture, and a new and considerable industry has been thus developed, the sugar production 1880 being about 5,650 tons. Beside the world-famed wines, the chief manufactures are silk, satin, cotton, and hemp fabrics, morocco leather, chemicals, wickerware, hats,

MALAGA—MALAN.

paper, and soap. The principal towns, besides the cap., are Antequera, Ronda, Colmenar, Marbella, Alora, Velez-Malaga, and Estepona. Pop. (1900) 511,989.

MALAGA, *mă'l'a-ga*, Sp. *mă'lâ-gâ*: city and seaport of Spain, cap. of the modern province of M.; on the shore of the Mediterranean, 70 m. n.e. of Gibraltar. Sheltered on the n. and e. by mountains, and with a climate of which dryness and constant sunshine are characteristics, this place is superior as a resort for invalids to any in France or Italy. Winter, as it is in the northern United States or even in England, is here almost unknown. M. is a place merely of commerce, and with the exception of some fine Moorish remains, it contains little that can be called artistic. The sea is here receding, and the old Moorish dock-yard and quay are now in the town, while the beautiful *Alameda*, or public walk, was covered with water in the last c. M. is famous for its sweet Muscatel wines, grown on the heights in the vicinity, and the richest of which are called *Las Lagrimas*. The produce of the vineyards is about 40,000 pipes. Exports consist chiefly of wines, oil, figs, almonds, grapes, sugar, and raisins; imports of salt fish, iron manufactures, and colonial produce. Sugar is manufactured; also cloth, ropes, leather, and soap. M., known to the Romans as *Malaca*, is a very ancient place: it was founded by the Phœnicians, and has had a commercial career, and a degree of prosperity for 3,000 years.—Pop. (1900) 130,109.

MALAGASSEE, a. *mă'l'ă-găs'sē*: belonging to Madagascar: N. the language of Madagascar.

MALAGUETTA PEPPER: see GRAINS OF PARADISE.

MALAISE, n. *mă-lāz'* [F. *malaise*, uneasiness]: in *med.*, an indefinite feeling of uneasiness; ill at ease.

MALAKANES, *măl-a-kă'nēz* [Russ. *Molokani*, milk-eaters]: religious sect in Russia, named from their violation of the rule of the Greek Church which prohibits milk on fast-days: they prefer the name *Gospel-men*. The sect arose in the middle of the 18th c. as a result of the work of a Prussian prisoner of war who explained the Bible from house to house in a village of s. Russia. Their doctrines are strongly evangelical, with Quaker refusal of oaths and a tendency toward millennial expectations. Being poor and untaught, their spiritual earnestness has sometimes exposed them to be misled by fanatical teachers. In the time of Emperor Nicholas the M. suffered severe persecutions: the police gathered about 16,000 of them into gangs, and drove them with physical violence across mountains and plains into the Caucasus. Many others fled into Turkey.—See *Malakanes* in Blunt's *Dictionary of Sects*.

MAL'AKOFF, or **MAL'AKHOFF**: see SEBASTOPOL.

MALAMOCCO: see VENICE.

MALAN, *mă-lŏng'*, CÉSAR HENRI ABRAHAM, D.D.: zealous French evangelical minister whose influence has been great in central Europe: 1787, July 7—1864, May

MALANDERS—MALATE.

18; b. Geneva. He studied theology in Geneva, and was ordained 1810; though, having been brought up in an infidel atmosphere (the presbytery of Geneva had issued an ed. of the New Test. in which passages teaching about Christ's person were changed to a Unitarian meaning), he did not throw off the influence of Voltaire and become a Christian convert, till 1817. Immediately then opposition met him: the ecclesiastical authorities forbade his preaching evangelical doctrines; he disobeyed, and was shut out from the pulpits in the city and discharged from his position as teacher in the Latin school. He gathered a congregation in a small chapel which he built, and, after 1830 he made missionary tours as a revival preacher in various parts of central Europe: this he did without formally separating himself from the Established Presb. Church. In derision his adherents were called *Momiers* (q.v.): many congregations of them were gathered, and in Geneva Dr. M. established a theological seminary. He had great zeal, spiritual fervor, and active beneficence; and his work was very fruitful.

MALANDERS, n. plu. *māl'ān-dérz* [F. *malandres*—from mid. L. *malandriā*]: chaps or scabs on the lowest parts of a horse's legs.

MALAPERT, a. *māl'ā-pért* [OF. *mal-apert*, ready to a fault—from OF. *mal*, ill, and *apert*, open, evident, ready, nimble in that he does: It. *aperto*, open, confident—from L. *apertus*, open]: bold and forward in speech or action; saucy; impudent. MAL'APERTLY, ad. *-lī*, impudently; saucily. MAL'APERT'NESS, n. *-nēs*, quick impudence.

MALAPROP, n. *māl'a-prōp*: name of a character (Mrs. M.) in Sheridan's *Rivals*, noted for her blunders in the use of words. MAL'APROPISM, n. *-izm*, act or habit of blundering in or misapplying words, through a desire to use big or fine language; a word so misapplied.

MALAPROPOS, ad. *māl-āp'prō-pō'* [F. *mal*, evil; à *propos*, to the purpose]: unseasonably; ill to the purpose.

MALAPTERURUS, *māl-āp-té-rō'rūs* [Gr. *malakos*, soft; *pteron*, a fin; *oura*, the tail]: genus of fishes of family *Siluridae* (q.v.), in which, in place of a true dorsal fin, there is a soft fatty fin near the tail. Two species are known—*M. electricus* and *M. Beninensis*. See ELECTRICITY, ANIMAL.

MALAR, a. *māl'ér* [L. *mala*, the cheek: It. *malare*, the cheek-bone]: pertaining to the cheek.

MÄ'LAR (or MÄ'LAREN), LAKE: see MAELAR, LAKE.

MALARIA, n. *māl-lā'rī-ā* [It. *male*, ill, bad; *arīā*, air]: air bearing any noxious influences; commonly, air tainted with marsh-miasma producing fevers (see AGUE: MIASMA: ENDEMIC). MALA'RIAL, adj. *-rī-āl*, or MALA'RIOUS, adj. *-rī-ūs*, affected by malaria; unhealthy.

MALATE, n. *māl'āt* [F. *malate*—from L. *mālum*, an apple]: a salt of malic acid.

MALAXATOR—MALAY PENINSULA.

MALAXATOR, n. *măl'ăks-ă-tēr*: a mixing mill; cylinder having a rotating shaft and stirring-arms to incorporate materials. Mortar-mills, pug-mills, and many other machines come under this description, e.g., machines for mixing the ingredients of pills.

MALAY, n. *ma-lā'*: a native of the peninsula of *Malay* or *Malacca* and adjacent islands: **ADJ.** pertaining to. **MALAY'AN**, a. *-lā'ăn*, pertaining to.

MALAY' APPLE: see **EUGENIA**.

MALAY' (or INDIAN or EASTERN) ARCHIPEL'AGO: largest and most important system of island groups in the world; 95° to 140° e. long., and 19° n. to 11° s. lat.; bounded n. by the China Sea, e. by the Pacific, s. and w. by Australia and the Indian Ocean. The principal groups in the M. A. are the Sunda Islands, including Sumatra, Java, Bali, Sumbawa, Flores, the Sandal-wood Island, Rotti, Timor, etc.; the Philippines, in the n.; Celebes and the Saleyer Islands, n. of Flores; the Moluccas, Key, Arru, Timor-Laut, and other groups, e. of Celebes. The chief islands for trade are Java, Sumatra, the Moluccas, and Borneo. The western or Dutch division of Papua, or New Guinea, is reckoned a part of the M. A. The Philippines belong to Spain; Great Britain possesses Singapore, Penang, Molucca, and Labuan. Native rajahs rule over several of the islands, but the Dutch E. Indies include the largest portion. The heat is tempered by sea-breezes, and water is abundant. Sugar, coffee, indigo, rice, and tea are largely produced in Java and Sumatra. Benzoin, gum-elastic, resin, pepper, rattans, cotton, drugs, ivory, dye-stuffs, edible nests, wax, tobacco, opium, and bêche-de-mer also are exported. Fine timber trees, including iron-wood, ebony, etc., are abundant, and the vegetation is luxuriant. Birds of paradise, and a fine species of parrot, are found in Papua, the Arru, and Key islands (see the several titles of principal groups or islands as above).

MALAY' PENINSULA, or **MALAC'CA**: long strip of land extending from Indo-China s. and s.e. toward the island of Sumatra. The peninsula begins properly at the head of the Gulf of Siam, and would thus include part of Siam proper and the British province of Tenasserim; but it is usual to limit the name to the portion s. of the river Pakshan, the frontier of Tenasserim. In the larger sense, the length of M. is about 900 m., and its area 83,000 sq. m.; the population is estimated less than 1,000,000. The width varies from 45 m. at the isthmus of Kra, and also at another point farther south, to 210 at Perak. The interior consists mainly of magnificent wooded granite mountain-ranges, some of whose peaks attain a height of 6,000 to 7,000 ft.; while along the coast there is almost everywhere a flat and fertile belt, fringed with numerous islands. There are numerous small rivers. The mean annual temperature near the sea is abt. 80°. There is no winter, but rains are frequent through the year. Tigers and leopards are

numerous and of great size. The Indian elephant, the rhinoceros, and several species of monkeys are found; also the vampire-bat, poisonous snakes, and many beautiful and brilliant birds. Tin abounds, and is largely worked. In physical features, M. resembles rather the islands of Sumatra and Java than Indo-China. The inhabitants are mainly Siamese in the north, civilized Malays (q.v.) along the coast, and uncivilized Malays, mixed with aboriginal Negrito tribes, in the interior. Politically, the n. part of the peninsula is occupied by small states tributary to Siam (as far south as 5° n.); the s. part by Malay states under British protection (as Perak, q.v., Johore, Rumbou, Salangor) and the British Straits settlements. These include the important islands of Singapore and Prince of Wales Island (with Wellesley on opposite coast), and Malacca (see these titles). It has been proposed to cut a ship-canal across the isthmus of Kra.

MALAYS, *ma-lāz'* (MALÁYU, a Malay word): name given, in a restricted sense, to the inhabitants of the Malay Peninsula, but in its wider acceptation, to a great branch of the human family found also in the islands of the Indian archipelago, in Madagascar, and in the numerous islands of the Pacific. In the fivefold division of mankind by Blumenbach, the M. are treated as a distinct race; but by most recent authors (of whom many hold to a threefold division of the human race) they are regarded as a branch of the Mongolidæ. Prichard has subdivided the various representatives of the Malay family into three branches:—(1.) the Indo-Malayan, comprehending the M. proper of Malacca, and the inhabitants of Sumatra, Java, Celebes, the Moluccas, and the Philippines, with whom, perhaps, may be associated the natives of the Caroline Islands and the Ladrones; (2.) the Polynesians; (3.) the Madecasses, or people of Madagascar. Accepting this subdivision, the present article is confined to the M. proper. For the natives of Madagascar, see that title: for the Polynesians generally and the Maoris in particular, see those titles.

In physical appearance, the M. are a brown-complexioned race, rather darker than the Chinese, but not so swarthy as the Hindus. They have long, black, shining, but coarse hair; little or no beard; a large mouth; eyes large and dark; nose generally short and flat; lips rather thicker than those of Europeans; and cheek-bones high. In stature, the Indo-Malays are for the most part below the middle height, while the Polynesians generally exceed it. The Indo-Malays have also slight, well-formed limbs, and are small particularly about the wrists and ankles. 'The profile,' according to Dr. Pickering, 'is usually more vertical than in the white race, but this may be owing in part to the mode of carriage, for the skull does not show a superior facial angle.' This is the general appearance of the M. proper, or inhabitants of the peninsula and Indian Islands; but they have subdivisions. There are the civilized M., who have a written

language, and have made some progress in the arts of life; there are the sea-people, *orang-laut*, literally 'men of the sea,' a kind of sea-gypsies or robbers; and there are the *orang banua* or *orang utan*, 'wild men,' or 'savages,' dwelling in the woods or forests, and supposed to be the aborigines of the peninsula and islands. 'These three classes of Malays,' says Crawford, 'existed nearly three centuries and a half ago, when the Portuguese first arrived in the waters of the Archipelago, just as they do at the present day. That people describes them as having existed also for two centuries and a half before that event, as, without doubt, they did in times far earlier.' Still, while so widely differing in habits, all these speak essentially the same language. The M. are essentially islanders, and have much of the daring and enterprise for which nations familiar with the sea are famous: they are found either as traders, or as pirates, through large portions of the eastern world. Their original seat is by themselves stated to have been Menangkabo, in the island of Sumatra, rather than the peninsula itself. Even the M. of Borneo claim to have had a Menangkabo origin. Palembang, however, also in Sumatra, has been mentioned as the original seat of Malay civilization; and others, again, point to Java as the source from which both Menangkabo and Palembang received their first settlers. 'The Javanese,' says Crawford, 'seem to have been even the founders of Malacca. Monuments, which prove the presence of this people in the country of the Malays, have even been discovered. Thus, Sir Stamford Raffles, when he visited Menangkabo, found there inscriptions on stone in the ancient character of Java, such as are frequent in that island; and he was supported in his conclusion that they were so by the learned natives of Java who accompanied him in his journey. The settlement of the Javanese in several parts of Sumatra is indeed sufficiently attested. In Palembang, they have been immemorably the ruling people; and although the Malay language be the popular one, the Javanese, in its peculiar written character, is still that of the court.' The Malay language is simple and easy in construction, harmonious in pronunciation, and easily acquired by Europeans. It is the *lingua franca* of the Eastern Archipelago. Of its numerous dialects, the Javanese is the most refined, a superiority which it owes to the influence of Sanskrit literature. Many Arabic words also have been incorporated with it, by which the Javanese supply the deficiency of scientific terms in their own tongue. In religion, the civilized M. are Mohammedans, having embraced that faith in the 13th or 14th c., forsaking for it Buddhism, which had been introduced probably about the 5th c. The tribes in the interior and the 'men of the sea' have either no religion, or such as can be regarded only most debased superstition. The moral character of the Indo-Malays generally does not stand high: they are passionate, treacherous, and revengeful. Although good sailors,

MALCOLM.

and able to amass wealth by legitimate commerce, they prefer piracy, and numerous have been the victims among European traders to Malay treachery and daring. Indeed, so little faith have Europeans in their professions or engagements, that they habitually refuse to engage more than two or three of them in a ship's crew, for fear of unpleasant, if not disastrous consequences.

MALCOLM, *mäl'kom*, MACDUNCAN, surnamed CANMORE (Celtic, *Cean-more*, 'Great Head'), King of Scotland: about 1024–1093, Nov. 13 (reigned 1056 or 7–93). He was the third Scottish king of the name Malcolm: M. MACDONALD having reigned 944–53; and M. MACKENNETH (grandson of the preceding) having reigned 1003–33. [A collection of laws, the *Leges Malcolmi Mackenneth*, has been attributed to him, but is obviously a work of a later age.]

For the first nine years of M. MacDuncan's reign, he was at liberty to devote his energies to the consolidation of his kingdom, England being then ruled by the peaceful Edward the Confessor. After William of Normandy had settled himself on the English throne, many noble Saxons sought refuge at the Scottish court; among them Edgar Atheling, nearest of kin to the Confessor, with his mother, Agatha, and his sisters Margaret and Christina. Margaret, who was young, beautiful, and pious, captivated the heart of the Scottish king, and a marriage quickly followed. Her biographer, Turgot (also her chaplain and confessor), tells us how earnestly and affectionately she labored to civilize the people and to 'enlighten' her husband. M., though a man of vigorous intellect, could not read her missals and books of devotion, but he used to kiss them in token of reverence, and he caused them to be richly bound, and ornamented with gold and jewels. The retinue of the king began to show something of a royal magnificence, and his plate was, according to Turgot, 'at least gilt or silvered over.' But M.'s new relations, unfortunately, embroiled him with the Normans. In 1070, he crossed the border, harried Northumberland and Yorkshire, but was soon obliged to retreat. William the Conqueror retaliated 1072, and wasted Scotland as far as the Tay. At Abernethy, M. was compelled to acknowledge him as his liege lord but (as the Scottish historians hold) only for such parts of his dominions as had belonged to England—viz., Cumbria and the Lothians. War broke out again between England and Scotland on the accession of William Rufus, probably at the instigation of the fugitive Anglo-Saxons and the discontented Normans, who had been pouring into the country during the iron reign of William, and had obtained large grants of land from the Scottish monarch. Nothing of note, however happened, and peace was again concluded; but the seizure of Carlisle by the English king soon provoked a fresh rupture, and, 1093, M. again crossed the border, and laid siege to Alnwick; but was suddenly attacked, defeated, and slain. His wife died on hearing the fatal news.

MALCOLM—MALDEN.

A fourth king of the same name was MALCOLM, surnamed '*the Maiden*,' 1141-1165 (reigned 1153-65), who was compelled to put down insurrections headed by Somerled, Lord of the Isles.

MALCOLM, Sir JOHN, G.C.B.: 1769, May 2—1833, May 30; b. Burnfoot, Westerkirk, Dumfriesshire: British statesman and historian. At the age of 14 he went to India as a cadet in the Madras army. About 1790, he began the study of Oriental languages, especially Persian. He distinguished himself at the siege of Seringapatam 1792, and was appointed to the staff as Persian interpreter. In 1800 he was ambassador to Persia, and formed an alliance with that country against Bonaparte. In 1802, 07, and 09, he was again minister-plenipotentiary to the Persian court. In 1803, he had been appointed pres. of Mysore. In 1812, he returned to England, received knighthood, and, after five years, went again to India on a political mission in the Deccan, and with the rank of brig.gen. in the Indian army; as a soldier greatly distinguishing himself in the wars against the Pindarris and Holkar. In 1827, he was appointed gov. of Bombay; left India 1830, and died at Windsor, England. M.'s writings are esteemed as authorities; they are—*A History of Persia* (London 1815, 2 vols. 4to; 2d ed. 1828); *Memoir of Central India* (2 vols. London 1823); *Political History of India from 1784 to 1823* (2 vols. 8vo, 1826); and *Life of Lord Clive* (London 1836). See his *Life and Correspondence*, by Kaye (1856).

MALCONFORMATION, n. *māl'kōn-fōr-mā'shūn* [L. *mālus*, evil, and Eng. *conformation*]: ill form; disproportion of parts.

MALCONTENT, n. *māl'kōn-těnt* [L. *mālus*, evil, and Eng. *content*]: one discontented or dissatisfied, particularly with political affairs; one given to seditious words or acts. MALCONTENT, or MALCONTENT'ED, a. *-těnt'ēd*, discontented; dissatisfied. MALCONTENT'EDLY, ad. *-lī*. MALCONTENT'EDNESS, n. *-nēs*, discontentedness.

MALDAH, *maw'l'dā*: town of British India, in Bengal; chief town of the dist. of M. (bounded w. and s.w. by the Ganges; 1,813 sq. m.; pop. 710,310). The town is on the left bank of the Mahununda, about 190 m. n. of Calcutta. In the rainy season, it is nearly insulated. It is a wretched place of ruined houses, with narrow irregular streets. Pop. 6,000.

MALDEGEM, *māl'dēh-gēm*: small town of E. Flanders, Belgium, 17 miles n.w. of Ghent. Tobacco is manufactured, and brewing and cotton printing are carried on. Pop. above 6,000.

MALDEN, *maw'l'dēn*: city in Middlesex co., Mass., on the Malden river, 5 m. n. of Boston. M. was settled as the village of Mystic Side 1634, incorporated as the town of 'Mauldon' 1649, and as a city 1882. It is on the Boston and Maine railroad; and has from its river water-power for important factories. Among the manufactures are leather, shoe-lasts, india-rubber boots and shoes,

MALDIVE ISLANDS—MALEBRANCHE.

fassels, and iron pipes. There are extensive and long-established dye-works. The U. S. govt. has here a large storehouse of saltpetre. Adoniram Judson, missionary, 'apostle of Burmah,' was b. in M. 1788. The town is one of the circle of suburban places around Boston, whose accessibility, healthfulness, and rural charm, have attracted numerous residents whose business is in the larger city. There are excellent schools, adequate banking facilities, and weekly newspapers. Pop. (1871) 7,367; (1881) 12,017; (1890) 23,031; (1900) 33,664.

MALDIVE ISLANDS, *māl'dīv*: chain of low coral islands forming a remarkable archipelago, in the Indian Ocean, about 400 m. w.s.w. of Ceylon; 500 m. in length by 45 m. average breadth, and comprise 17 groups or atolls, each atoll surrounded by a coral reef. The entire number of islands including the islets, is estimated at about 50,000. Mali, the largest of the chain, and the residence of the native prince, who is called 'The Sultan of the Twelve Thousand Isles,' is 7 m. in circumference; Pop. 2,000. Each island is circular in form, with a lagoon in its center, and has an elevation above the sea, averaging abt. 6 ft., and in no case more than 20 ft. at high-water mark. The larger and inhabited islands are clad with palm, fig, citron, and bread-fruit trees. Grain is abundantly produced. Wild-fowl breed in prodigious numbers; fish, rice (imported from Hindustan), and cocoanuts, constitute the food of the inhabitants, who are strict Mohammedans. The 'sultan' sends an annual tribute to the gov. of Ceylon. Pop. of entire chain, about 30,000.

MALDON, *mawldon*: market-town, river-port, and municipal borough of England, county of Essex, a mile below the confluence of the Chelmer and the Blackwater, 9 m. e. of Chelmsford, 44 m. n.e. of London. Besides the manufacture of crystallized salt, brick-making, brewing, and iron-founding, there are the usual industries of a port. In 1880, there entered 3,555 vessels, of 162,066 tons, and cleared 3,568 vessels of 164,090 tons. Pop. (1871) 5,586; (1881) 5,476; (1891) 5,397.

MALE, a. *māl* [OF. *masle*; F. *mâle*, male—from L. *mas'culus*, of the male kind, manly]: relating to the sex that begets young; bearing stamens only; having the thread on the outside, as a screw: N. a male animal or plant; in *bot.*, a plant or flower which bears stamens and no pistil. **MALE SCREW**: see SCREW. **MALE FERN**: see FERN.

MALEBRANCHE, *mâl-bröngsh'*, **NICOLAS**: French philosopher: 1638, Aug. 6—1715, Oct. 13; b. Paris, where his father was pres. of the chamber of accounts. He was deformed and sickly, and from childhood fond of solitude. At the age of 22, he entered into the Congregation of the Oratory, and applied himself to the study of Bible history and of the Fathers of the church, till Descartes's treatise, *De Homine*, falling into his hands, attracted him to philosophy. His famous work, *De la*

MALEDICTION—MALESHERBES.

Recherche de la Vérité (3 vols. Paris, 1674, and other editions), evincing great depth and originality of thought, combined with perspicuity and elegance, had for its object the psychological investigation of the causes of the errors to which the human mind is liable, and of the nature of truth and the way of reaching it. He maintains that we see all things in God (his famous *Vision en Dieu*); that all beings and thoughts exist in God (*Dieu est le lieu des esprits, comme l'espace est le lieu des corps*); and that God is the first cause of all changes which take place in bodies and souls, which are therefore merely passive therein. His system is a kind of mystic idealism. It was immediately opposed by Ant. Arnauld, Bossuet, and many others, and was subjected to a thorough and critical examination by Locke and Leibnitz. Besides the work above mentioned, M. wrote a *Traité de Morale*, a *Traité de la Communication de Mouvement*, and *Conversations Métaphysiques Chrétiennes*, in the last of which he endeavored to exhibit the harmony of his philosophic views with Christianity. He died at Paris (and as English critics are fond of saying) of a metaphysical dispute with the subtle Berkeley.

MALEDICTION, n. *mäl'ë-dīk'shūn* [F. *malédiction*—from L. *maledictiōnem*, evil-speaking—from *mälë*, badly, *mälus*, evil; *dictus*, spoken]: evil-speaking; denunciation of evil; curse or execration.—**SYN.**: curse; cursing; imprecation; execration; anathema; denunciation.

MALEFACTOR, n. *mäl'ë-fäk'tër* [L. *malefactor*, an evil-doer—from *mälë*, badly, *mälus*, evil; *factus*, done; *factor*, a doer]: an evil-doer; a criminal.—**SYN.**: criminal; evil-doer; culprit; felon; convict.

MALEIC, or **MALÆIC**, a. *mă-lë'ik* [L. *mālum*, an apple]: denoting an acid obtained from malic acid (q.v.).

MALESHERBES, *mäl-zārb'*, **CHRÉTIEN GUILLAUME DE LAMOIGNON DE**: 1721, Dec. 6—1794, Apr. 23; b. Paris: French statesman. He was educated at the Jesuits' College; became counselor to the parliament of Paris 1744, and succeeded his father as pres. of the court of aids 1750, where his clear judgment, strict integrity, and humane disposition, enabled him to be of great service to his country. A quiet but determined opponent of government rapacity and tyranny, he watched the ministry with a jealous eye, and was indefatigable in his efforts to prevent the people from being plundered. About the same time (1750), he was appointed censor of the press, a most unsuitable office for him, which he appears to have accepted lest it should fall into the hands of some bigot or court-hireling; and so tolerant was he, that French authors pronounced the period of his censorship 'the golden age of letters.' To M. is due the publication of the famous *Encyclopédie*. In 1771, his bold remonstrances against the abuses of law which Louis XV. was perpetrating, led to his banishment to one of his estates. At the accession of Louis XVI. (1774), who esteemed M., he was recalled, and entered

Paris in triumph. In 1776, on the dismissal of Turgot, he resigned all official employment; and till the Revolution, spent his time in travel, or in improving his estates. The first storms of that wild period passed by and left him unscathed; but when he heard that the unfortunate king, who had always neglected to profit by his advice, was about to be tried by the convention, he magnanimously left his retreat, and offered to defend his old master. The convention granted permission, but from that day M. was himself a doomed man. He was arrested 1793, Dec., and guillotined in April following, after he had witnessed the death of his daughter and her husband, M. de Chateaubriand, brother of the famous author of that name. M. was a member of the French Acad., an able writer on political, legal, and financial questions; and was a noble, gentle, and stainless man, one of the most high-minded statesmen of the 18 century.

MALET', CLAUDE FRANÇOIS DE: see MALLET.

MALEVOLENT, a. *mă-lěv'ō-lěnt* [L. *malev'ōlens* or *malev'ōlen'tem*, ill-disposed—from *mălě*, badly, *mălūs*, evil; *volens*, willing]: ill-disposed and spiteful toward others; prompted by personal hate or malice to do injury. MALEV'OLENCE, n. *-lěns*, evil disposition and spite toward another; a hatred that prompts to injure another. MALEV'OLENTLY, ad. *-lě*.—SYN. of 'malevolent': ill-disposed; malicious; malignant; mischievous; evil-minded; envious; invidious; resentful; spiteful; bitter; rancorous.

MALFEASANCE, n. *măl-fě'zans* or *măl-fă'zāns* [F. *mal-faisance*, malevolence—from *mal*, ill, badly; *faire*, to do—from L. *facēre*, to do]: evil-doing; illegal deed.

MALFORMATION, n. *măl'fōr-mă'shūn* [F. *mal*, ill, badly—from L. *mălě*, badly, and Eng. *formation*]: ill or wrong formation. MALFORMED, a. *măl-fawrmă'*, ill-formed—only applied to animal bodies.

MALIBRAN, *mă-le-brōng'*, MARIA FELICITA: one of the most celebrated mezzo-soprano singers of recent times: 1808, Mar. 24—1836, Sep.; b. Paris; daughter of Manuel Garcia, Spanish singer and teacher of singing. When she was still very young, her reputation extended over Europe. Her father attempted to establish the Italian opera in New York, but without success; and, on account of his circumstances, she married M. Malibran, a Frenchman, supposed to be one of the richest merchants of New York, but who soon became bankrupt, on which she went again upon the stage, and was received with great enthusiasm in France, England, Germany, and Italy. She expended, with remarkable benevolence, the great sums which she won. Her first marriage having been dissolved, she married M. Beriot, famous violinist, 1836; but in Sep. of that year, she died at Manchester, whither she had gone to take part in a musical festival. M. was a woman of noble heart and high intellect, and her conversation possessed an exquisite fascination. She has left a number of musical

MALIC—MALICE.

compositions, some of which are deservedly popular. A memoir of her was published in England shortly after her death, by the Countess of Merlin.

MALIC, a. *māl'ík* [L. *mālum*, an apple]: of or from apples, as *malic acid*. MALIC ACID ($C_4H_4O_4$) occurs abundantly in most acidulous fruits, particularly in unripe apples, gooseberries, and currants, in which it is found as an acid or super-salt of potash or lime, which gradually changes into a neutral salt as the fruit ripens. It crystallizes in groups of radiating acicular prisms, but as the crystals are very deliquescent, it is obtained usually as a syrupy, semi-transparent mass, with a very sour smell, and readily soluble in water and alcohol. The chemical changes which this acid undergoes under the influence of various reagents are very remarkable, and illustrate many points in vegetable physiology in reference to the maturation of fruits, etc. Thus, nitric acid converts it into oxalic acid; hydrated potash, into oxalic and acetic acids; ferments, into succinic, butyric, acetic, and carbonic acids and water. When heated to about 350° , it loses the elements of water, and becomes converted into the two isomeric acids, maleic acid and fumaric acid (q.v.). Malic acid forms two series of salts with bases, namely, neutral and acid salts. The most characteristic of these salts are the neutral malates of lead and of lime.

MALICE, n. *māl'is* [F. *malice*—from L. *malitiā*, ill-will—*from mālus*, evil: It. *malizia*]: extreme enmity of heart; a disposition to injure others unjustly for personal gratification or from a spirit of revenge; spite; deliberate mischief. MALICIOUS, a. *māl'ish'ūs* [F. *malicieux*—from L. *malitiōsus*]: harboring enmity without cause; proceeding from extreme hatred or ill-will. MALICIOUSLY, ad. *-lī*. MALICIOUSNESS, n. *-nēs*, extreme enmity or disposition to injure. MALICE PREPENSE, *prē-pēns'* [L. *pre*, before; *pensus*, weighed]: malice previously and deliberately entertained (see MALICE, in Law).—SYN. of 'malice': ill-will; virulence; grudge; pique; hatred; animosity; malevolence; enmity; aversion; malignity; maliciousness; rancor; bitterness;—of 'malicious': see under MALEVOLENT.

MALICE, in Law: planning or doing a wrongful act without lawful excuse. The motive in either case is the purpose and intention of one person to injure in some way another; and the absence of any legal justification makes the acts differ from those of ordinary malice, or the ill-will of one person toward another, from which may spring any amount of real or fancied causes of injury. A spiteful, malignant, vindictive, or revengeful disposition, is apt to commit acts of malice both in the ordinary and the legal sense, and may be guilty in the former and not guilty in the latter sense. An injurious act emanating from a weak mind, a lack of caution, or a sudden, unaccountable impulse, may have all the force of ordinary malice; but in the absence of a de-

MALIGNANT DISEASES.

signed, intentional injury, it will not come within the strict limits of criminal malice. The law infers an intent to kill from the deliberate use of a deadly weapon; and it has been held that a burglar intended murder when he broke into a dwelling because he would commit it if necessary to escape.

MALICIOUS PROSECUTION: prosecution based on malice in law; one for which there is no probable cause; or which on trial the facts did not warrant. It may be by criminal proceeding or civil suit, and the person against whom the proceeding is taken may maintain an action and recover damages. A party who directly and personally institutes malicious proceedings, or instigates or causes them, is responsible for the results, for 'every man is presumed to intend the natural and probable consequences of his own voluntary acts.' Action in relief can be maintained against the prosecutor and against a mere informer; it can be taken against a former plaintiff in a civil action who maliciously sued out a writ and prosecuted it, and will lie against a corporation; but it cannot be maintained against grand jurors for information given them and on which the prosecution is founded, nor against an attorney at law for bringing the action if he was regularly retained. But before action in relief is begun, the M. P. or action must be ended, and the aggrieved party show by acquittal or final judgment that the prosecution was without cause.

MALICORIUM, n. *māl'ī-kō'rī-ūm* [L. *malīco'rīum*—from *mālum*, an apple; *corīūm*, skin]: the tough rind of a pomegranate.

MALIGN, a. *mā-līn'* [L. *malignus*, envious, spiteful, for *mali-genus*, ill-born—from *mālus*, bad; *geno*, I bring forth, I produce: It. *maligno*; F. *malin*; OF. *malīng*, malignant]: having violent hatred or enmity toward others; unfavorable; pernicious; tending to injure: V. to regard with envy or malice; to defame; to treat with extreme enmity. **MALIGN'ING**, imp. **MALIGNED'**, pp. *-līnd'*. **MALIGN'ER**, n. *-ēr*, one who maligns; a sarcastic censurer. **MALIGN'LY**, ad. *-lī*, perniciously. **MALIGNANT**, a. *mā-līg'nānt* [L. *malīg'nans* or *malignan'tem*, wounding, mutilating]: actuated by extreme enmity or malice; virulent; dangerous to life; extremely heinous: N. in *Eng. hist.*, one of the adherents of the house of Stuart—so called by the opposite party. **MALIGN'NANTLY**, ad. *-lī*. **MALIGNANCY**, n. *mā-līg'nān-sī*, bitter enmity; state of being malignant. **MALIGNITY**, n. *mā-līg'nī-tī* [F. *malignité*—from L. *malignitātem*, ill-will, spite]: bitter enmity toward another; malice without provocation; deep-rooted spite; extreme evilness of nature; violent hatred; virulence.—**SYN.** of 'malignant:' see under **MALEVOLENT**.

MALIGNANT DISEASES: characterized by tendency to form products capable of a propagation injurious to the normal tissues, or those which so infect the

MALIGNANT PUSTULE—MALKIN.

blood that it becomes poisoned and unfit for maintenance of life: see TUMORS: CANCER: SARCOMA. In diseases non-surgical, the application of the term malignant is indefinite: scarlet fever (q.v.) and diphtheria (q.v.) when severe, are malignant; less severe, semi-malignant. Asiatic cholera (q.v.) and Malignant pustule (q.v.) are malignant; also one form of intermittent fever tending to blood-poisoning. Small-pox (q.v.) though liable to be extremely dangerous—truly a frightful disease—is not in all its forms ‘malignant,’ as, unlike some diseases above noted, whose product of morbid matter is intrinsically poisonous to the system, small-pox takes on that character only when producing an *excessive amount* of morbid matter.

MALIGNANT PUSTULE: contagious and very fatal disease, common in France, where it bears the name *Charbon*; comparatively rare in England and the United States. It begins as a small dark-red, painful spot, on which there soon appears a pustule or vesicle, seated on a hard inflamed base. When this is opened, a black slough becomes apparent. This sloughing spreads rapidly, involving the cellular tissue, and sometimes even the adjacent muscles.

The disease appears to be caused by infection from horned cattle, which are sometimes affected by a similar disease, but it arises also by inoculation of diseased fluids. It is believed that flies which have alighted on the ulcers of diseased animals may occasionally convey the infection. The constitutional symptoms are much the same as those of putrid typhus fever; while the treatment consists in destroying the diseased surface by powerful caustics, in keeping up the strength by wine, brandy, beef-tea, bark with nitric acid, etc.; and in giving opiates in sufficient doses to relieve the pain during the day and to procure sleep at night.

MALIGNANT TUMORS: see CANCER: TUMORS: SARCOMA.

MALINES, *mâ-lēn'*: city in Belgium: see MECHLIN.

MALINGER, v. *mă-līng'gēr* [F. *malindre*, ailing, sickly—from *mal*, ill, badly; OF. *hingre* or *heingre*—from L. *æger* or *ægrum*, indisposed. sick: comp. Gael. *mall*, slow; *iongar*, a sore]: to feign illness; in *mil.* or *nav. lang.*, to protract or pretend disease in order to avoid duty: it is an offense punished severely in most armies: see FEIGNING OF DISEASE. **MALIN'GERING**, imp.: N. act of one who feigns himself sick in order to escape duty. **MALIN'GERED**, pp. *-līng'gêrd*. **MALIN'GERER**, n. *-gēr-ēr*, a soldier who feigns himself sick.

MALISON, n. *măl'ī-sn* [Norm. F. *malison*, a curse]: a curse; a malediction; execration; the opposite of *benison*.

MALKIN, n. *maw'kīn* [from *Mall* or *Moll*, the shortened form for *Mary*, the kitchen-wench: comp. Gael. *mall*, slow; *ceann*, a head]: a mop made of clouts for sweeping an oven; a dirty wench.

MALĪ—MALLEABLE.

MALĪ, n. *mawĭ*, *māl*, or *mēl* [F. *mail*, a hammer—from L. *malleūm*, a hammer: It. *malleo*]: a heavy wooden beetle; an instrument for driving anything with force; a public walk; a level shaded walk, so called from being originally a walk where they played with *malls* and balls: V. to beat with something heavy; to bruise. **MALĪNG**, imp. **MALLED**, pp. *mawld*. See **MAUL**. *Note*. —**MALL**, a public and shady walk, e.g., *Pall Mall*, London (pronounced *Pell-Mell*), said to be named from OF. *pale-maille*, a game in anc. times there played, in which a bowl or ball is struck with a mallet through a high arch of iron, etc., thus imitated in the modern game of croquet; It. *pallamaglio*, a stick with a mallet at one end for playing with a wooden ball; the game of mall—from *palla*, a ball, *maglio*, a hammer, a club—see **SKEAT**: but it is also said to be derived from mid. L. *mallam*, the open square or court for the political meetings of the anc. Germans—see **LATHAM**.—See **BALL**.

MALLALIEU, *māl-la-lū'*, **WILLARD FRANCIS**, D.D.: Meth. Episc. bishop: b. Sutton, Mass., 1823, Dec. 11. He graduated at Wesleyan Univ. 1857; entered the ministry of the Meth. Episc. Church 1858; was connected with the New England conference 24 years; appointed presiding elder of the Boston district 1882; and elected bp. 1884. He received his degree from E. Tenn. Wesleyan Univ. 1874.

MALLARD, n. *māl'ērd* [F. *malart*; OF. *malard*, a drake]: the wild duck—often restricted to the male or drake: see **DUCK**.

MALLEABLE, a. *māl'lē-ā-bl* [F. *malléable*—from L. *malleabīlis*, malleable—from *malleūs*, a hammer: It. *malleabile*]: that may be flattened out or extended by hammering, or under a roller: applied to metals. **MAL'LEABIL'ITY**, n. *-bīl'i-tī* [F. *malléabilité*], or **MAL'LEABLENESS**, n. *-bl-nēs*, property which certain metals possess of being reducible to thin leaves, either by hammering (hence the corresponding German word, *Hämmerbarkeit*) or by lamination between rollers. The order in which the malleable metals exhibit this property is as follows—gold, silver, copper, platinum, palladium; iron, aluminium, tin, zinc, lead, cadmium, nickel, cobalt. Gold far surpasses all other metals in malleability, being capable of reduction into films not exceeding the 200,000th of an inch in thickness; and silver and copper may be reduced to leaves of great tenuity. Although gold and silver present the property also of *Ductility* (q.v.) in the highest degree, there is no constant relation between the two properties; e.g., iron, although it may be reduced to extremely thin wire, is not nearly so malleable as gold, silver, or copper. **MALLEABLEIZE**, v. *māl'lē-ā-bī-īz*, to render any substance capable of extension as above. **MAL'LEABLEIZING**, imp. *-bl-ī-zīng*. **MAL'LEABLEIZED**, pp. *-bl-īz-d*. **MALLEATE**, v. *māl'lē-āt*, to extend as above. **MAL'LEATING**, imp. **MAL'LEATED**, pp.

MALLEACEÆ—MALLOCK.

MALLEACEÆ, *māl-lē-ā'sē-ē*: family of lamellibranchiate mollusks, regarded by many as a sub-family of *Aviculidæ* (see PEARL OYSTER), and of which the typical genus, *Malleus*, is remarkable—in an adult state—for elongation of the ears of the shell, the other part of which at the same time assumes a curiously elongated, wavy, or crumpled form. The shell thus acquires the name of HAMMER SHELL. The species are natives of the E. and W. Indies and of the South Seas.

MALLEMBA: state in s.e. Africa: see CACONGO.

MALLEMUCK, *māl'lē-mūk* (corrupted to Mallemoke or Molly Mawk), [fr. Dutch *Mallemugge*, midges that fly around a light]: early Dutch name for the Fulmar; indefinitely applied to small albatrosses: see FULMAR.

MALLEOLAR, a. *māl-lē'ō-lér* [L. *malleolus*, a small hammer—from *mallēus*, a hammer]: in anat., belonging to the ankle—applied to certain small arteries. **MALLEOLUS**, n. *māl-lē'ō-lus*, the joint formed with the legs on each side of the foot; an ankle; in bot., a hammer-shaped slip; the layer by which gardeners propagate plants.

MALLET, n. *māl'lèt* [F. *maillet*, a mallet, a dim. of *mail*—from L. *mallēum*, a hammer]: a wooden hammer, chiefly used by stone-cutters and carpenters.

MALLET (or **MALET**), *mâ-lâ'*, CLAUDE FRANÇOIS DE: 1754, June 28—1812, Oct. 29; b. at Dôle in Franche-Comté. He was an eager supporter of the Revolution, rose to the rank of brig.gen. 1799, was intrusted with the government of Pavia 1805, but was removed from office because of his extreme republicanism. He returned to Paris, engaged in republican plots, and 1812, June, being imprisoned with some royalists, he formed with them a scheme for overthrowing the empire during Napoleon's campaign in Russia. He escaped from prison on the night of Oct. 23-24, liberated other conspirators, including two generals, and having previously gained the support of a battalion of the Parisian guards, he called them to arms, spreading among the soldiers, and affirming to Hullin, commandant of the city, that the emperor was dead in Russia, and that a provisional government had been established. Hullin expressed doubt; and M. drew a pistol and fired it in his face, wounding him; whereupon help rushed in and M. was made prisoner. He maintained resolute coolness to the last, and was shot with his principal fellow-conspirators.

MALLEUS, n. *māl'lē-ūs* [L. *mallēus*, a hammer]: one of the three movable bones, viz., the *malleus*, the *incus*, and the *stapes*, which traverse the tympanum of the ear—so named from its fancied resemblance to a hammer.

MALLOCK, *māl'ok*, WILLIAM HURRELL: author: b. Devonshire, England, 1849. He was educated at Balliol College, Oxford; took the Newdigate prize with the poem *The Isthmus of Suez* (1871); and has published *The New Republic* (1876); *The New Paul and Virginia* (1877);

MALLOPHAGA—MALLOW.

Is Life Worth Living? (1879); *Poems* (1880); *A Romance of the Nineteenth Century* (1881); *Social Equality: a Study in a Missing Science* (1882); *Property and Progress* (1884); *Atheism and the Value of Life: or Five Studies in Contemporary Literature* (1885); *The Old Order Changes* (1886); and *In an Enchanted Island* (1889).

MALLOPHAGA, n. plu. *māl-lōf'ă-gă* [Gr. *mallos*, a fleece; *phagō*, I eat]: an order of insects, mostly parasitic upon birds.

MALLOTUS, n. *māl-lō'tūs* [Gr. *mallōtōs*, fleecy—from *mallos*, a lock of wool]: a small soft-finned fish, rather larger than a sprat, inhabiting the coasts of northern seas; also called the capelan.

MALLOW, *māl'lō*: market-town and watering-place of Ireland, county of Cork, beautifully situated among mountains, on the left bank of the Blackwater, 19 m. n.n.w. of the county town. On the opposite side of the river, here crossed by a bridge of three arches, is the suburb Ballydahin. The town is resorted to in summer for its tepid mineral waters, and contains a neat spa-house. Tanning and some small manufactures are carried on. Near M. are large flour-mills. Pop. (1871) 4,165; (1881) 4,437.

MALLOW, n. *māl'lō*, or MAL'LOWS, n. -lōz [L. *malva*; Gr. *malāchē*, mallows—from Gr. *malassō*, I soften, named from its emollient qualities], (*Malva*): typical genus of plants of nat. ord. *Malvaceæ*, having a 5-fid calyx, with an outer calyx of three leaves; stamens cohering in a tube; numerous styles cohering at the base; and nu-



Common Mallow (*Malva sylvestris*).

merous one-seeded carpels fixed in a whorl around an axis, and forming a separable orbicular fruit. The species, numbering about 16, are widely distributed through

MALMAISON—MALMESBURY.

the n. hemisphere; they are herbaceous plants, more rarely shrubs.—COMMON M. (*M. sylvestris*), growing on waysides and heaps of rubbish, is a perennial, with rather large, bluish-red flowers on erect stalks.—DWARF M. (*M. rotundifolia*), has smaller whitish or reddish-white flowers. These two plants have a mucilaginous and somewhat bitter taste, and the leaves are used as emollient and demulcent medicine, a decoction of them being administered in cases of irritation of the pulmonary and of the urinary organs; and poultices made of them are very frequently used to allay external inflammation. Other species have similar properties.—MUSK M. (*M. moschata*) has a faint musk-like smell.—The fibre of *M. crispa* is used in Syria for textile purposes, and the fibres of many species are probably fit for similar use, and for manufacture of paper. The young leaves of some are occasionally used as boiled vegetables. The M. of Job xxx. 4 is probably salt-wort (*Atriplex Halimus*).

MALMAISON, LA, *lâ mât-mā-zōng'*: village in France, about 7 m. w. of Paris; favorite resort of robbers during the 9th c., from which it derived its name, meaning 'evil spot.' After being owned by various families of no special note, it was bought by Josephine Beauharnais 1798, for \$32,000. She enlarged and beautified the grounds; furnished the palace with a fine library and many works of art; and made it a brilliant centre of fashionable and literary society. After Napoleon here met and married her, she improved the place more magnificently, and through her charming manners and tact did much to help her husband in his ambitious political projects. After she became empress M. was little occupied, until after her divorce, 1809, Dec. 16, when she retired thither, and kept up a semblance of its former courtly brilliance. She was often visited here by Napoleon, and after his defeat at Waterloo he spent several days here. Emperor Alexander and the king of Prussia also visited her during the first occupation of Paris. Here she died, 1814, May 29, and the place reverted to her son, Eugene Beauharnais. In 1826 it was bought by Hagnerman, the Swedish banker, who reduced it to its original small dimensions; in 1842 it became the property of Queen Maria Christina of Spain; and 1861 of Louis Napoleon, who restored it to some of its former beauty.

MALMESBURY, *māmz'bēr-ī*: market-town of England, county of Wilts, 20 m. n.n.w. of Devizes, 92 m. w. of London; on the Great Western railway. M. is a very ancient and interesting town. Here, according to William of Malmesbury, a monastery was founded before 670. The abbey afterward became a cloth-factory. The remains of the abbey-church, partly early Norman, partly decorated English, are still seen. There are several other relics of antiquity in the place.—Pop. (1871) 3,142; (1881) 3,133.

MALMESBURY—MALMSEY.

MALMESBURY, WILLIAM OF: early English historian: b. prob. in Somersetshire, abt. 1075 (some say 1095); d. 1142 (or later); conjectured to have been son of a Norman father and an English mother. He was educated in the monastery whence he derived his name, and of which he became librarian. M.'s principal works, in Latin, are *De Gestis Regum*, history of the kings of England from the Saxon invasion to the 26th year of Henry I.; *Historiæ Novellæ*, from the 26th year of Henry I. to the escape of Empress Maud from Oxford; and *De Gestis Pontificum*, account of the bishops and principal monasteries of England from the conversion of Ethelbert of Kent by St. Augustine to 1123. The first was translated into English by the Rev. John Sharpe (Lond. 1815), and has been reprinted in Bohn's Antiquarian Library (1847). Of his other works, Gale has printed his *Antiquities of Glastonbury*, and Wharton his *Life of St. Wulstan*, in *Anglia Sacra*. M. gives proof in his writings of great diligence, good sense, modesty, and genuine love of truth. His style is much above that of his contemporaries.

MALMÖ, mäl'mö: town in Sweden, third in importance in the kingdom, principal town of the 'læn,' or dist. of Malmöehus (1,852 sq. m., pop. 413,421); on the Sound, nearly opposite Copenhagen. Pop. (1901) 62,954. M. is a busy seaport, maintaining an active steam and sailing communication with Copenhagen and all the great Baltic and German Ocean ports, and has manufactures of stockings, tobacco, soap, sugar, woolen goods, etc. The harbor in the n.w. has recently been deepened, admitting vessels drawing 18 ft. M. is the seat of a governmental dept., and is a lively, pleasantly situated town. The ancient fortifications, mostly now converted into public walks, date from the time of Eric of Pomerania, who, 1434, erected strong lines of defense on the sea-side of the town, and built the castle which still remains. M. was an important place of landing and embarkation as early as 1259, and through the middle ages it was extensively visited by German and other traders. In 1523 it was the scene of the signing of a treaty of peace between the Danes and Gustavus Vasa.

MALM-ROCK, n. mām-rōk': a local term for a calcareous sandstone, which forms portions of the *Upper Greensand* in Surrey and Sussex—known also as forestone; a kind of brick, soft and yellow.

MALMSEY, n. mām'zī [OF. *malvoisie*—originally from *Malvasia*, in the Morea]: a rich kind of grape. **MALMSEY, or MALMSEY WINE** (Malvasian wine; Fr. *vin de Malvoisie*): originally denoting the red and white wines of Napoli di Malvasia, in the Morea (one of the principal fortresses and commercial centres of the Levant during the middle ages); afterward, applied to similar wines produced in Cyprus, Candia, and other islands of the Archipelago. Malmsey wines are of luscious sweetness, and have a most peculiar bouquet. The Malmsey wines of commerce are mostly the product of Teneriffe, the Madeiras,

the Azores, the Lipari Isles, Sardinia, Sicily, and Provence. Malmsey is made from grapes grown on rocky ground, fully exposed to the sun, and left to hang on the vines for a month longer than those used to make dry wines, by which time they are partially withered.

MALONE, *ma-lōn'*: village, cap. of Franklin co., N. Y.; on Salmon river and the Ogdensburg and Lake Champlain railroad; 57 m. w. of Rouse's Point, 60 m. e. by n. of Ogdensburg. It is one of the northern gateways to the Adirondacks. It contains 8 churches, several graded schools, acad., 3 national banks (cap. \$350,000), railroad machine and repair shops, paper mill, iron foundries, woolen factories, flour mills, and tannery. The river furnishes excellent water-power. M. is in a fine agricultural region, has a valuable quarry of Potsdam sandstone, and possesses a large trade. Pop. (1900) 5,935.

MALONE, *ma-lōn'*, EDMOND: editor of Shakespeare: 1741, Oct.—1812, May 12; b. Dublin. He was educated at the Univ. of Dublin, taking the degree B.A. He studied law; but becoming possessed of a considerable fortune, he went to London, and engaged in literary pursuits. In 1780 he published 2 vols. supplementary to Steevens's ed. of Shakespeare (1778). M.'s edition of Shakespeare (1790) was warmly received. The essays on the *History of the Stage*, and on the *Genuineness of the Three Plays of Henry VI.*, have been highly praised for acuteness, research, and respect for earlier editors. In 1796 he signalized himself as a literary detective by exposing the Shakespearian forgeries of the Irelands. He left materials for another ed. of Shakespeare, which appeared 1821 (21 vols.). See *Life of Edmond Malone, with Selections from his Manuscript Anecdotes* by Sir James Prior (Lond. 1860).

MALPIGHI, *mâl-pě'ghē*, MARCELLO: 1628, Mar. 10—1694; b. near Bologna, Italy: founder of microscopic anatomy. He held, at different periods, the professorship of medicine in Bologna, Pisa, and Messina. In 1691 he was summoned to Rome, and appointed chief physician and chamberlain to Pope Innocent XII.: there he died. He is now known chiefly for his discoveries in the anatomy of the skin, of the kidney, and of the spleen: the so-called *rete Malpighii* of the skin is no longer regarded as a special structure, but the *Malpighian bodies* or *corpuscles* of the kidney and the spleen still retain the name of their discoverer. He is remarkable also as the first who witnessed and examined with the microscope the circulation of the blood which Harvey a few years before had correctly inferred: he thus discovered the blood corpuscles. Among his most important works are: *De Formatione Pulli in Ovo*; *De Cerebro*; *De Linguâ*; *De Externo Tactûs Organo*; *De Structurâ Viscerum*; *De Pulmonibus*; and *De Structurâ Glandularum Conglobatarum*. His *Opera Posthuma*, ed. by Petrus Regis of Montpellier, contain a history of his discoveries and controversies, together with some autobiographical details.

MALPIGHIACEOUS—MALSTRÖM.

MALPIGHIACEOUS, a. *mäl-pĭg'ĭ-ā'shūs* [see next entry]: in *bot.*, applied to hairs formed as in the genus **MALPIGHIA**, *-pĭg'ĭ-ā*, which are attached by the middle, and lie parallel to the surface on which they grow. **MALPIGHIACEÆ**, *mäl-pĭg-ĭ-ā'sē-ē*, natural order of exogenous plants; trees or shrubs, many of them climbing shrubs or lianas. They often exhibit an anomalous formation of stem, great part of the woody matter being deposited in lobed zoneless ribs. The leaves are simple, generally with glands on the stalks or under-side. The calyx is 5-partite, usually with very large glands; the corolla of five petals convolute in bud; the stamens generally ten, often monadelphous, a fleshy connective projecting beyond the anthers. There are about 600 known species, natives of tropical countries, chiefly of S. America, many having gaudy flowers. A few produce timber of bright yellow color. The bark of some species of the genus *Byrsonima* is astringent and medicinal, and at one time attracted attention as a remedy for pulmonary consumption: it is known as *Alcornoque Bark*. The fruit of some, as the **BARBADOES CHERRY** (q.v.), is pleasant.

MALPIGHIAN, a. *mäl-pĭg'ĭ-än* [after the anatomist *Malpighi* (q.v.)]: in *anat.*, term applied to arterial tufts in the kidneys, to a special layer in the skin, and to some other anatomical structures.

MALPLAQUET, *mâl-plâ-kā'*: village (pop. 400) in the dept. of Nord, France, 20 m. e. of Valenciennes, and close to the Belgian frontier: notable for the bloody defeat of the French, under Marshal Villars, by the British and Dutch, commanded by the Duke of Marlborough and Prince Eugene, 1709, Sep. 11. The forces engaged consisted of more than 200,000 men, the allies having a slight superiority in numbers; and the loss on each side amounted to about 20,000 men, the French losing also many standards and cannon. Marshal Villars was severely wounded early in the engagement, and the command devolved on the old Marshal de Boufflers, under whom the French, after great slaughter, retreated in good order. The result of the conflict was the capture of Mons.

MALPRACTICE, n. *mäl-präk'tĭs* [L. *mālus*, evil, and Eng. *practice*]: evil practice; illegal or immoral conduct.

MALSTRÖM, *mâl'ström*, or **MOSKÖESTROM** ('whirling stream'): most famous whirlpool in the world; on the Norwegian coast, between Moskøe and Moskenäs, two of the Loffoden (q.v.) Isles. The tremendous current that rushes between the Great West Fjord and the outer ocean, through the channels between the Loffoden Isles, creates many other dangerous currents, such as the Galström, Napström, etc.; but these are not to be compared with the famous Malström. The current runs for six hours from n. to s., and then six hours from s. to n., producing immense whirls. The depth of the water has been ascertained to be about 20 fathoms, while immediately w. of the straits the soundings are

from 100 to 200 fathoms. The whirlpool is greatest at high or low water; and when the wind blows directly against the current, it becomes extremely dangerous, the whole sea for miles around being so violently agitated that no boat can live in it for a moment. In ordinary circumstances, it may be traversed even across the centre without apprehension. The stories of ships, whales, etc., being swallowed up in the vortex, are fables; but doubtless a ship once fully under the influence of the current would either founder or be dashed upon the rocks, and whales have often been found stranded on the Flagstadt coast from the same cause.

MALT, n. *mawlt* [Ger: *malz*; Icel. *malt*, malt—from Icel. *melta*, to digest, to rot; *maltr*, rotten]: barley, or any other grain, rendered sweet by artificial germination, the sweetness being preserved by checking the germination and drying in a kiln (see BEER, ETC.): V. to make grain into malt. MALT'ING, imp.: N. the act or process of making barley into malt. MALT'ED, pp. MALTSTER, n. *mawlt'stér*, one whose trade is to make malt. MALT-HORSE, in *OE.*, a horse employed in turning the stones for grinding malt—hence, a stupid drudge; a dull dolt. MALT-DUST, siftings of malt (see MALT REFUSE). MALT-LIQUOR, ale and porter; beer as made from malt. MALT'-MAN, the workman engaged in making malt. MALTIN, n. *mawlt'in*, a nitrogenous ferment said to exist in malted barley and other cereals, much more active than *diastase*. MALTOSE, n. *mawlt'ôs*, the sugar of malt; the sugar produced by the action of diastase upon starch.

MALTA.

MALTA, *maw'l'ta*: island and British possession, chief island of the Maltese group, in the Mediterranean, $17\frac{1}{4}$ miles long by $9\frac{1}{4}$ broad; 95 sq. m. Gozo (q.v.), smaller island 4 m. from M., is 9 m. long, 5 m. wide; 20 sq. m. M. is of late Eocene formation, the prevailing rocks being sandstone and limestone; and it occupies a central position in the Mediterranean Sea, about 54 m. from the Sicilian coast, and about 200 from Cape Bon, on the African coast. From its position, and from the enormous strength of the fortifications, M. is a possession of immense value to any commercial nation with a navy strong enough to protect it from blockade. Consequently, M. is one of the most important, after India, of the British dependencies. Possessing one of the most splendid harbors in the world, with such even depth that the largest vessels may anchor alongside the shore, the island forms at once an admirable station for a fleet to command the Mediterranean—a military focus, where a force protecting the route to Egypt and India can be concentrated—and a useful entrepôt for receiving the manufactures of Britain, which the small craft of the Mediterranean carry to every point on the shore of that inland sea and its tributaries. By whomsoever possessed, M. has always been held in high estimation. Between it and Gozzo, or Gozo (q.v.), lies the small island Comino; and off this last, the two islets Cominotto and Filfla, the former showing a rocky crest, the latter a venerable church; while elsewhere, round the shores of M. and Gozo, a few rocks stud the sea, sustaining each a few fishermen, and affording herbage for goats on their moss-grown summits: among these are—Pietro Nero, or Black Rock; Scoglio Marfo, Salmonetta, and the *Hagira tal general*, or Fungus Rock, where grows the famed *Fungus melitensis* (see CYNOMORIUM). M. and Gozo, with their adjacent islets, form a crown colony of Great Britain, a compact little realm, celebrated in history, possessing a magnificent capital in Valetta, and, from the fact that, owing to peculiar circumstances, vast contributions came to M. from all Rom. Cath. Europe, adorned with public buildings, institutions, and works out of all proportion to its intrinsic importance.

In physical conformation, M. is comparatively low; its highest point is near Casal Dingli, about 750 ft. above sea-level: Citta Vecchia, the ancient cap., is on a steep height near. On the w. and s. precipitous cliffs 300 to 400 ft. high rise from the sea. The surface is diversified by hill and dale, the land being intersected by parallel valleys, from s.w. to n.e., the most considerable of which is the vale called Melleha. Across the island stretch the Ben-jemina hills or crags, and many spurs branch from them, which give picturesqueness to the scenery. From the spongy nature of the limestone of which the island is composed, much of the rain falling in the wet season soaks in, and being evaporated through the thin alluvial covering by the heats of summer, keeps the ground moist, and gives it a fertility not to be expected from so scanty and poor

a soil. So thin, indeed, was the original surface-soil, that considerable quantities of earth were imported into M. from Sicily. The productiveness of the soil must be attributed also to the quantity of carbonate of lime held in a minutely divided state above the entire face of the rock.

M. shows no signs of volcanic formation; but the action of the sea among its cliffs has hollowed out grottoes and caverns in almost every direction, some of considerable extent. The inhabitants are industrious, and good agriculturists, and every foot of the soil is diligently cultivated. On the whole, about as much of superior kinds of grain is raised as is consumed on the islands; and of inferior sorts a considerable amount is exported. Wine, resembling that of Spain, is produced; the sugarcane is cultivated. The vegetable products comprise all that flourish in Italy, as aloes, oranges, and olives, with many plants of more tropical growth. M. was famed of old for roses. Salt and soda are manufactured; there are quarries of marble, alabaster, and building-stones. Mules and asses are remarkable in M. for strength and beauty, but horned cattle are small. Maltese goats are fine animals. The birds of M. are renowned for splendid plumage, and its bees produce an unexcelled aromatic honey.

Medina, former cap. of the island, now known as Citta Vecchia, or Notabile, is a handsome old town, on an inland height; it contains the ancient palace of the Grand Masters of the order of St. John, the cathedral, a college, and is still the seat of the bishopric; pop. 7,000. Its rival and successor is the beautiful Valetta (q.v.); pop. more than 60,000. The numerous *casals* or villages scattered throughout M. and Gozo are neatly built, and have an aspect of industry and frugal happiness.

It is thought by some that M. was the *Hyperion* or *Ogygia* of Homer, but there is little doubt that the Phœnicians colonized the island at a very early date, probably B.C. 16th c. Before they were dispossessed by the Greeks, B.C. 736, they had developed considerable commerce. The Greeks called the island *Melitas*: they were driven out by the Carthaginians about B.C. 500. As early as the first Punic war, it was plundered by the Romans, but did not come finally into their possession until B.C. 242. They valued it highly as a commercial entrepôt; also for its cotton and linen cloths, fabrics then, as now, manufactured of wonderful fineness by the Maltese. The island remained under its old laws, governed by a *proprætor*, subject to the prætor of Sicily. On the n. coast is the port of St. Paul, where tradition fixes the scene of the wreck of the ship carrying that apostle to Rome. On the division of the empire, M. followed the fortunes of the eastern division. During the 5th c., it fell successively under the Vandals and Goths, whose barbarism nearly annihilated its commerce. In 533 Belisarius recovered M. to the Byzantine empire, in nominal union with which it remained more than three

centuries; but its prosperity had departed, and its civilization almost vanished amid constant local feuds. In 870 the Arabs destroyed the Greek power in M., and fortified the harbor as a station for their corsairs. Count Roger, of Sicily, drove out the Arabs 1090, and established a popular council for the government of the island, composed of nobles, clergy, and representatives elected by the people. This council, in a more or less modified form, subsisted 700 years. Under a marriage-contract, M. passed to the German emperor, who constituted it a marquisate, but it had ceased to be a place of trade, and was merely a garrison of more expense than value. Charles of Anjou, after overrunning Sicily, made himself master of M., which clung to the French even after they had been expelled from Sicily; but after a time the houses of Aragon and Castile successively held the island. Subsequently, Emperor Charles V. took possession of M., and, 1530, granted it with Gozo and Tripoli, in perpetual sovereignty, to the knights of the order of St. John of Jerusalem, from whom the Turks had recently captured their great stronghold at Rhodes. The knights raised by degrees the stupendous fortifications which render M. so powerful, and, moreover, spent their great income in beautifying the island in every way. Meanwhile, they rendered incessant services to Christendom in the chastisement of the ferocious Barbary pirates. To revenge these acts, the Turks brought immense forces against M. 1557, and again 1565. The latter siege was carried on by the Sultan Solyman himself, with the flower of the Ottoman army; but the Grand Master La Valette opposed a heroic resistance, and the sultan was forced to reembark with the loss of more than 25,000 of his best troops. The defenders lost 260 knights and 7,000 Maltese soldiers, and their gallantry was the theme of admiration throughout the world. After this siege the knights built Valetta. In 1571 they, with the Maltese, behaved most courageously at the battle of Lepanto (q.v.), where the Turks lost 30,000 men. Though waging perpetual war with the Moslem, the knights continued in possession of M. until 1798, when, overcome by Bonaparte's treachery and disorganized by internal quarrels, the order surrendered their noble fortresses to the French. After pillage and infamous treatment by the French republican forces, the Maltese rose in a few months against their oppressors, and after a siege of two years, British auxiliaries arriving, the French garrison of Valetta capitulated to the English general Pigot. The treaty of Amiens stipulated that M. should be restored to the knights of St. John; but the Maltese loudly protested against such an arrangement, and preferred the peaceful government of Great Britain. The British government consequently refused to make the transfer, doubtless appreciating also the vast value of their new possession, and Napoleon made the refusal one of his grounds for the resumption of hostilities. The congress of Vienna recognized M. as

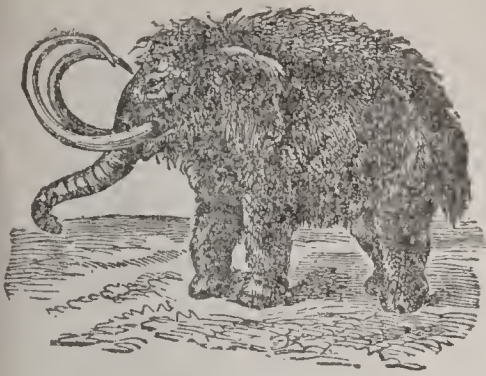
MALTA.

a British dependency, the condition in which it has since remained.

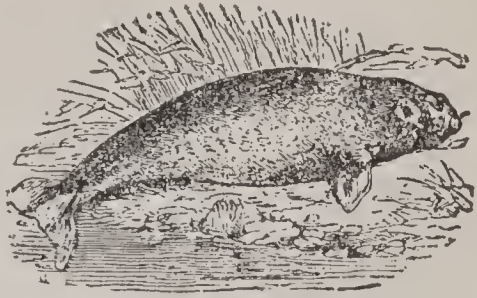
In 1881 M. and Gozo, with the adjacent islands, together contained 149,782 inhabitants (including the British residents and foreigners, but excluding the military, who numbered 6,531). The population was increasing rapidly, but the annual rate of increase had declined from 1858. The upper classes speak Italian, but the real language of the people is a patois compounded from many sources, as must be expected from so checkered a history. Arabic, however, so far predominates that the Maltese find little difficulty in communicating with the Barbary peasants. It is alleged by some that the Maltese language—if its Italian and German elements were eliminated—would remain almost pure Punic, and would accurately represent the speech of Carthage at the time of its destruction. The religion of the people is strictly Rom. Cath., and, considering that the British flag waves over the island, but a scanty toleration is granted to other forms of faith. There are a university, 1 lyceum, and 2 secondary schools, 146 public schools, with 15,789 pupils, besides 114 private places for education. The govt. grant for educational purposes (1901) was £17,940. There is in Valetta an excellent public library, founded by the knights 1760, containing 50,000 vols., free to all: also a smaller library in Gozo.

The commandant of the garrison is gov., and is aided in the civil govt. by a council of 20 members, of whom 6 are officials, and 14 are freely elected. The revenue amounted (1901) to £385,698, the expenditure £394,508. Customs and excise, with a few assessed taxes, provide the former; the latter is absorbed in the charges of the civil govt., and in a contribution of £6,200 toward the military expenditure. On the other hand, Great Britain maintains a considerable force in the islands, mainly for imperial purposes, at a cost of (1885) £432,181 a year. Besides a large body of British artillery the garrison includes the Royal Malta Fencible Artillery, a fine native regt. of 639 officers and men. There is an extensive arsenal and a very important dock-yard, M. being the head-quarters of the British fleet in the Mediterranean. Taken altogether, M. is a possession the British highly value; it is nearly, if not quite, as strong as Gibraltar, and far more useful.

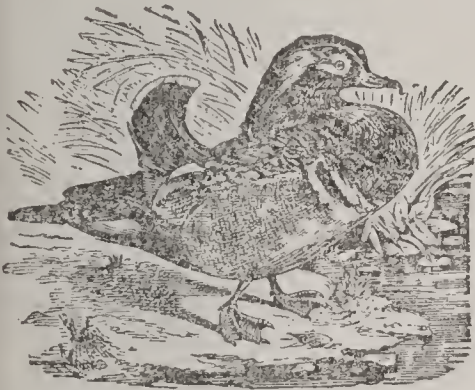
The public debt (1901) was £79,168, at a very low rate of interest. In 1901 the vessels which entered and cleared the port, exclusive of the coasting-trade, numbered 3,910 and had a total tonnage of 3,533,703 tons; of these 1,542 were British. In the same year the total value of the imports was £9,915,254, while total exports were £8,683,126, grain in transit from the East for the United Kingdom figuring very largely in the transactions. Pop. (1894) 170,265; (1901) 188,141.



Mammoth.



American Manatee (*Manatus Americanus*).



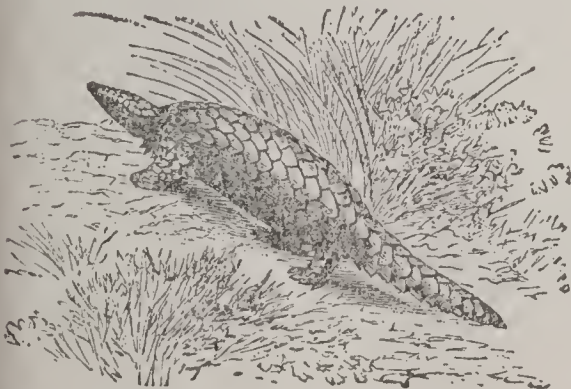
Mandarin Duck.



Mandolin.



Fruit of Mangrove (*Rhizophora mangle*).



Four-toed or African Manis (*M. tetradactyla*).



Head of Thrush: *a*, *b*, Upper and lower mandibles.

MALTA—MALTESE DOG.

MALTA, KNIGHTS OF: see ST. JOHN OF JERUSALEM, KNIGHTS OF: MALTA.

MALTALENT, n. *mäl'täl-ënt* [OF. *mal-talent*; It. *mal-talento*, ill-will against any one: *mal*, and Eng. *talent*]: in OE., ill-humor; spleen.

MALTE-BRUN, *mawl-te-brün'*, F. *mält-brüng'* (properly MALTIE BRUUN), KONRAD: eminent geographer: 1775, Aug. 12—1826, Dec. 14; b. Thysted, in Jutland. He studied in Copenhagen, and at the outbreak of the French Revolution embraced with ardor the liberal cause, so that, being prosecuted for political publications, he was twice compelled to flee from Denmark, and finally, 1800, was condemned to perpetual banishment from his native country. He sought refuge in Paris, where he maintained himself by teaching and literary labors. In 1808 he began *Annales des Voyages, de la Géographie et de l'Histoire* (24 vols.), concluded 1814. In 1818 he began, with Cyries, *Nouvelles Annales*, etc. He devoted his pen to the support of Napoleon during his reign, and 1815 became connected with an ultra-royalist journal, and a defender of the theory of legitimacy adopted by the congress of Vienna. His principal work is *Précis de la Géographie Universelle* (8 vols. Par. 1824—28, with atlas). He took part also in *Dictionnaire Géographique Universelle* (8 vols. Par. 1821), and was sec. to the Geographical Soc. of Paris.—His son, VICTOR ADOLF M. (b. 1816), one of the most eminent living geographers of France, has succeeded his father as sec. of the Geographical Soc. of Paris.



Maltese Cross.

MALTESE, n. *mawl-tēs'*: the natives of the island of *Malta* in the Mediterranean: ADJ. pertaining to Malta.

MALTESE CROSS, *mawl-tēz'*: cross of eight points, of the form worn as a decoration by the Hospitallers (q.v.) and other orders of knighthood.

MALTESE' DOG: kind of small spaniel, with round-



Maltese Dog.

ish muzzle, and long, silky, generally white hair. It is useless, except as a lap-dog; but is a very ancient

breed, figured on Roman monuments, and noticed by Strabo.

MALTHA, n. *mäl'thä* [L. and Gr. *maltha*, kind of mineral fat from Kirwan, resembling wax, probably composed of paraffine]: slaggy mineral pitch, as distinct from fluid *petroleum*, and from solid *asphalt*: see ASPHALT: BITUMEN: DEAD SEA.

MALTHUS, *mäl'thüs*, THOMAS ROBERT: scientific writer on the principle of population: 1766–1834, Dec. 29; b. in the county of Surrey, England. He was well connected, and graduated with honors 1788, at Jesus College, Cambridge, of which he became a fellow. He became clergyman of a small parish in his native county, and divided his time between his cure and the university libraries. In 1799 he travelled through Sweden, Norway, Finland, and part of Russia, making notes. Next year he visited France and other portions of central Europe. Although M. has the reputation of a bold theorist, the charm of his writings consists in his knowledge, gained by observation, of how men have existed and acted in various parts of the world and under diverse conditions. This, with his knowledge of human nature, and his sagacity and accuracy in the use of details, gave his writings influence over public opinion, and made his books readable even to those who made war on his conclusions. In 1798 he published his *Essay on the Principles of Population as it affects the Future Improvement of Society*—in subsequent editions so greatly enlarged and enriched that it can hardly be identified with its first edition. His predominant idea was evidently suggested by Hume's essay on the populousness of ancient nations, in which vague statements as to vast multitudes of human beings subsisting in any place, or wandering from place to place, are brought to the test of the means of subsistence at their disposal. M. set himself to finding out how the relation of population to the means of sustenance could affect the future of the world. The result was appalling. The human race was found to increase at something like geometrical progression; while the fertility of land, by bringing in waste, and improving the methods of agriculture, increased in only an approximately arithmetical proportion. Hence, population at its natural rate of increase would soon surpass the means of subsistence. The final check to the growth of population is the want of food; other natural checks are poverty, exposure, unwholesome toil, and disease. Of preventive checks, the only one recognized by M. was, that a man should not marry till he could support a family: emigration and free trade, however, would palliate the disadvantages of swift growth of population. M.'s work was directed against the old view that the chief duty of a state was to increase its population as much as possible; also against the optimist theory of Rousseau and others, that misery was mainly the fault of bad government: it was indeed a natural re-

MALTHUSIAN—MALT REFUSE.

action from the superficial optimism which Rousseau had brought into vogue. He sought to prove that the undue growth of population is an inevitable and all but insurmountable cause of poverty and misery. The influence of M.'s teaching was great on many economists who did not accept his pseudo-mathematical theory, and it contributed to the great poor-law reform of 1834, which emphasized the duty of self-support and of providence for the future, and the responsibilities of parentage. This is indeed the only proper lesson to be drawn from M.'s theory. M., personally one of the most amiable, just, and cultured of men, has been fiercely abused both for his teaching, and for inferences from it which he himself never made and would have utterly repudiated. Appointed prof. of modern history and political economy at the E. India company's college of Haileybury 1805, M. filled his chair with great repute until his death at Bath. See Bonar's *M. and his Work* (1885).

MALTHUSIAN, a. *māl-thū'zǎ-ăn*: pertaining to *Malthus* (q.v.), who taught that population increased more rapidly than the means of subsistence, and that consequently the undue increase should be checked, and early marriages discouraged.

MALTON, *maw'l-ton*, usually **NEW MAL'TON**: market-town in the N. Riding of Yorkshire, England, on an elevation on the right bank of the Derwent, 22 m. n.e. of York. Its two churches present fine features of Norman architecture. Its grammar school, with a small endowment, was founded 1547. There are the remains of a Gilbertine priory, founded 1150. Iron and brass founding, tanning, brewing, etc., are carried on, and the trade is considerable. M. was an important Roman military station. After having been burned down, the town was rebuilt in the reign of Stephen, since which time it has been generally called New Malton. Pop. of borough, which extended far beyond the town (1871), 8,168; (1891) 8,754.

MALTREAT, v. *māl-trēt'* [F. *maltraiter*, to treat ill: but simply L. *mālĕ*, badly, and Eng. *treat*]: to abuse; to treat roughly or rudely. **MALTREAT'ING**, imp. **MALTREAT'ED**, pp. **MALTREAT'MENT**, n. *-mĕnt*, ill-usage; abuse.

MALT REFUSE, or **MALT WASTE**: products of two kinds: (1) the *cornings* or small shoots and radicles of the germinated grain, separated before the malt is used by the brewer, often called *Malt Dust* and *Kiln Dust*; (2) the exhausted malt, after it has been used by the brewer, called *Draff*. Both are of use for the feeding of cattle, but the first kind is the most nutritious, being rich in nitrogenous substances, which the brewer extracts from the malt used by him; draff, however, is advantageously employed, with turnips, for the feeding of dairy cattle. Malt dust is used also as a manure, chiefly as top dressing, and is very fertilizing and rapid in its effect.

MALURUS, *ma-lūr'ūs*: genus of Australian birds, giving its name to a large subdivision of the family *Sylviadæ*, in which are many Asiatic and African species, and some natives of S. Europe. They have generally a long tail; in some, very long, as in the **EMEU WREN** of Australia, in which it is more than twice the length of the body, the shafts of its feathers loosely fringed on each side. The Emeu Wren (*Stipiturus malachurus*) is a very pretty little bird, living chiefly among long grass. One of the most noted *Maluri* is *M. cyaneus*, the **BLUE WREN** or **SUPERB WARBLER** of Australia, gorgeously attired in black, blue, white, and brown: it haunts scrubby brushwood.

MALUS, *mâ-lüss'*, ÉTIENNE LOUIS: 1775, June 23—1812, Feb. 23; b. Paris: engineer. He studied mathematics and milit. engineering at Mézières and at the Polytechnic School, Paris; entered the army as capt. 1797; took part in the capture of Malta and Jaffa; was promoted chief of battalion 1799; was commissioned by the emperor to prepare plans for enlarging and improving the fortifications and harbor at Antwerp 1804; had charge subsequently of the reconstruction of the fortification at Kehl: and became mayor, member of the French Acad., and examiner at the Polytechnic School 1810. He discovered the polarization of light, and his memoir, *Theory of Double Refraction*, was awarded an acad. prize. He also published *Traité d'Optique* (1810); *Essay on the Measurement of the Refractive Force of Opaque Bodies*; *Remarks on Some New Optical Phenomena*; *Phenomena accompanying Refraction and Reflection*; and *The Axis of Refraction of Crystals*.

MALVA, n. *māl'vā* [L. *malva*, the herb mallows]: mallows, a common plant found in most countries of the world, and much used medicinally. **MALVACEÆ**, n. plu. *māl-vā'sē-ē*, the mallow tribe or order of plants (see below). **MALVA'CEOUS**, a. *-shūs*, pertaining to mallows: see **MALLOW**.

MALVACEÆ, *māl-vā'sē-ē*: natural order of exogenous plants, of which about 1,000 species are known, chiefly tropical, and most abundant in America, though the most important species belong to the old world. They are herbaceous plants, shrubs, occasionally in tropical countries trees; with alternate entire or lobed leaves; the pubescence, if any, starry; the flowers showy, generally on axillary stalks; the calyx usually of five sepals or five segments, often with an epicalyx; the petals generally five, hypogynous, twisted in bud; the stamens numerous, united by their filaments; the ovary consisting of a number of carpels around a common axis, the styles generally five, the ovules few or many; the fruit dry or fleshy. The plants of this order have great general similarity both in appearance and in properties and products. All contain a mucilaginous substance in great quantity, abundant particularly in the roots of the perennial herbaceous species. This mucilaginous qual-

MALVASIA—MALVERN HILL.

ity makes some of them very useful in medicine as emollients and demulcents. The young foliage of some is used as a boiled vegetable. The seeds of all contain a considerable quantity of bland fixed oil. The inner bark of the stem often yields a useful fibre, for which species of *Hibiscus* and *Sida* particularly are valued; and to this order belong the Cotton plants, valuable for the fibre which envelops their seeds. Many are ornaments of flower-gardens.—See COTTON: HIBISCUS: HOLLYHOCK: MALLOW: MARSH-MALLOW: SIDA: URENA.

MALVASIA: see MALMSEY.

MALVERN, *maw'vèrn* or *maw'l'vèrn*, GREAT: town and watering-place in Worcestershire, England, picturesquely situated on the e. side of the Malvern Hills 8 m. s.w. of Worcester, 120 m. n.w. by w. of London. The purity and abundance of the spring-water, and the facilities for healthful exercise afforded by the hills, have rendered Malvern a great resort for invalids following the hydropathic treatment, for which there are several large establishments. There are chalybeate and bituminous springs. Pop. (1881) 7,934; (1891) 6,107.

MALVERN HILL, *māl'vèrn*, BATTLE OF: near Richmond, Va., 1862, July 1; between about 90,000 Union troops under McClellan, and 60,000 Confederate under Lee. It was the last of the engagements known as the 'seven days' battles,' the chief of which were those of Mechanicsville, June 26; Cold Harbor, June 27; Savage's Station, and Frazier's Farm, June 30; and M. H. The hill is a plateau, $1\frac{1}{2}$ m. long and $\frac{3}{4}$ m. wide, about 1 m. from the James r. and 11 m. from Richmond, Va. On the morning of July 1 the Union forces were posted on this hill, protected by steep gullies in front, the woods on the flank, and 60 guns skilfully posted to concentrate their fire. This strong position the Confederates, who had been repulsed at Frazier's Farm the day before, now tried to take by storm. At about 9 A.M. Lee ordered D. H. Hill, commanding the Confederate right, to attack the Union forces. Hooker met the attack with so destructive an artillery fire that Hill abandoned the attempt. Next Lee sent Magruder with 20,000 men to make a second attack, in which D. H. Hill joined. They, too, were repulsed, Magruder losing, in $1\frac{1}{2}$ hours, about 500 killed and 2,000 wounded, and Hill 336 killed and 1,373 wounded. Besides these, Jackson's main division, to which Hill belonged, being within distant range of the Union guns, though itself not actively engaged, lost 41 killed and 363 wounded. The total Confederate loss on this day, therefore, was about 900 killed and 3,500 wounded, the bulk of which was sustained by Hill's and Magruder's divisions, which at the beginning numbered only about 28,000 men. The Union loss was about 375 killed and 1,800 wounded. The Union victory was not followed up next day, but on the night following McClellan retreated to Harrison's Landing, and thence in Aug. to the Potomac. Lee held his ground a week, then retired to Richmond,

the siege of which he had broken and so gained his end. See CHICKAHOMINY, BATTLES OF.

MALVERSATION, n. *māl'vēr-sā'shūn* [F. *malversation*—from L. *mālē*, badly; *versātiōnem*, a turning round, a changing: It. *malversazione*]: evil conduct; improper behavior; fraudulent practices.

MALWA, *maw'wā*: ancient kingdom of India, lying mostly n. of the Nerbudda, and s.w. of the valley of the Ganges; an uneven plateau 1,500 to 2,500 ft. above sea-level. It is now divided into a number of protected states, roughly co-extensive with the w. portion of the central India agency.

MAMALUKES, n. plu. *mām'ā-lūks*, or MAM'ELUKES, or MAMLOUKS, or MEMLOOKS [Ar. *mamlūk*, a purchased slave]: slaves of the beys or provincial governors of Egypt, brought from the Caucasus, and who formed their armed force. When Genghis Khan desolated great part of Asia in the 13th c., and carried away a multitude of the inhabitants for slaves, the sultan of Egypt bought 12,000 of them, partly Mingrelians and Tcherkesses, but mostly Turks, and formed them into a body of troops. But they soon found their own power so great that, 1254, they made one of their own number sultan of Egypt, founding the dynasty of the Baharites, which gave place to another Mamaluke dynasty, that of the Borjites, 1382. The Caucasian element predominated in the first dynasty, the Tartar element in the second. In general, they formed able and energetic rulers, and Egypt under their sway arrived at prosperity and power to which she had been a stranger since the days of Sesostris. Selim I., who overthrew the Mamaluke kingdom 1517, was compelled to permit the continuance of the 24 Mamaluke beys as governors of the provinces. This arrangement subsisted till the middle of the 18th c., when the number and wealth of the M. gave them such a preponderance of power in Egypt that the pasha named by the Porte was reduced to a merely nominal ruler. The number of them scattered throughout Egypt was between 10,000 and 12,000 men. Their number was kept up chiefly by slaves brought from the Caucasus, from among whom the beys and other officers of state were exclusively chosen. Their last brilliant achievements were on the occasion of the French invasion of Egypt, and during the time immediately following the retirement of the French. At this time, Murad Bey stood at their head. But in 1811 they were foully massacred by Mohammed Ali (q.v.), afterward viceroy of Egypt.

MAME, *mām*, ALFRED HENRI ARMAND: French publisher: b. Tours, 1811, Aug. 17. He was brought up in the large printing establishment founded by his father in Tours, and with his cousin, Charles Ernest M. (1805, Nov. 4—1883, Feb. 8), succeeded to the business 1833. In 1845 Alfred became sole proprietor, and by his personal energy raised the establishment to one of great importance. Every feature of book-making and book-

selling was introduced, and with some 1,200 employés about 20,000 vols. bound and unbound were produced daily. M. made specialties of devotional and liturgical works, editions of the classics, elementary treatises on science and education, and, after 1854, of richly illustrated works, such as the Bible with Doré's illustrations, *La Touraine*, and *Chefs-d'Œuvre de la Langue Française*. He received prizes for his book exhibits at the London exhibition 1851, and at Paris 1855 and 67, and at the latter was awarded one of the special prizes of 10,000 fr., offered to the model establishment in which the greatest social harmony and comfort prevailed among the workmen. He became a commander in the Legion of Honor, 1877.

MAMELON, n. *măni'č-lön* [F. *mamelon*, a teat—from L. *mamma*, a breast, a swelling or protuberance, as on the bark of a tree]: in *mil.*, a slightly rising rounded mound, raised as a fortification.

MAMELUCO, *măm-ē-lū'kō* or *mâ-mā-lô'kō*: in some S. American languages, denoting a child of a negro father and an Indian mother.

MAMERS, *mâ-mār'*: small town of France, dept. of Sarthe, 25 m. n.n.e. of Le Mans. Coarse linens, calico, beer, and leather are manufactured. Pop. 6,000.

MAMIANI, *mâ-mē-â'nē*, TERENCE, Count: Italian philosopher and statesman: 1801–85; b. Pesaro. Having been prominent in the futile revolutionary outbreak at the accession of Gregory XVI., M. sought safety in flight to Paris, whence he promoted with energy the revolutionary tendencies of Italy. In 1846, on the accession of Pius IX., he declined the proffered papal amnesty, as involving disavowal of his former principles; but on its being unconditionally granted, he availed himself of it, and even formed part of the papal ministry on the promulgation of the constitution. The inconsistent policy of the pope compelled him to resign his post, and he withdrew to Turin, where he founded, with Gioberti, a society for promoting the union of Italians. On the flight of Pius IX. from Rome to Gaeta, he re-entered the political arena, and was for a short period foreign minister in the revolutionary cabinet of Galetti. On the fall of Rome, he retired to Genoa; 1856, he was returned member of the Sardinian parliament, and 1860 entered Cavour's ministry as minister of instruction. He was appointed ambassador to Greece 1861, to Switzerland 1865. His chief works are: *Del Rinnovamento della Filosofia antica Italiana* (1836); *Poeti dell' età Media* (1842); *Dell' ontologia e del Metodo*; *Principi della Filosofia del Diritto*. In 1870, he became editor of a new quarterly review *Filosofia delle Scuole Italiane*.

MAMILLA, n. plu. *mă-mil'lă* [L. *mamilla*, a pap, a teat—from *mamma*, a breast: F. *mamelle*, a teat, a breast]: in *bot.*, little granular prominences on the surface of certain pollen. MAM'ILLATED, a., or MAM'MILLATED, a. *ālă-tēd*, applied to a wart-like projection which surmounts a hemispherical body: see MAMMILLARY.

MAMMA—MAMMALIA.

MAMMA, n. *măm'mă* [L. *mam'ma*, a breast]: in *med.*, a nipple; a teat; a breast.

MAMMA, sometimes **MAMA**, n. *mă-mă'* [L. *mamma*, the breast, a nipple or teat: It. *mamma*; F. *maman*; Dut. *mamme*; Fin. *mamma*; W. *mam*, *maimna*, mother: an imitative word]: familiar word for mother used by all ranks above the lowest—often contracted by children into **MAM**, *măm*, and **MA**, *mă* (in more dignified usage the terms for parents are father and mother). **MAMMAL**, n. *măm'măl*, an animal that suckles its young. **MAM'MALS**, n. plu. *-mälz*, or **MAMMALIA**, n. plu. *măm-mă'lı-ă*, the great class of animals which suckle their young by teats or nipples (see below). **MAMMA'LIAN**, a. *-lı-ăn*, pertaining to the mammalia. **MAM'MARY**, a. *-măr-ı*, pertaining to the breasts. *Note.*—The true origin of **MAMMA** is purely imitative in the various languages in which it occurs, being the earliest natural attempt of the infantile voice to articulate sounds in the repetition of the syllable **MA** or **MAM**.

MAMMA'LIA: highest class of the animal sub-kingdom *Vertebrata* (q.v.). This class includes man and all the animals which resemble him in the most important points of their organization; and it is naturally placed at the head of the animal kingdom, because (independently of man) it contains the animals which manifest the highest intelligence and possess the most complex organization.

The most distinctive character of the M. is their mode of development and of nourishment during the earliest period of life. They all are brought into the world alive (viviparous), not merely, as in certain (ovo-viviparous) reptiles and fishes, by the retention and hatching of the egg within the oviduct, but by the formation of a new connection between the embryo and its mother, while the former lies within the maternal cavities, so that provision is made for its development before birth, not, as in birds, etc., by the large yelk (see **DEVELOPMENT OF THE EMBRYO**), but by a constant supply of nutriment direct from the maternal blood. In mammals, the ovum, on quitting the ovary, is extremely minute, and the materials of the yelk serve only to support the embryo during its very earliest period. After undergoing certain changes in the passage through the Fallopian tube or oviduct, the ovum reaches the uterus or womb, and connects itself by a set of root-like tufts of vessels with the maternal vessels. These tufts absorb from the mother's blood the ingredients necessary for support of the embryo, while they convey back to it the effete particles of the embryonic tissues. Through this organ, which simultaneously increases in size with the embryo, and is named the placenta, the young animal, except in the lowest orders of the class—viz. Marsupialia (q.v.) and Monotremata (q.v.)—derives its nutriment during the whole period of Gestation (q.v.); while in the two orders just named, no vascular connection of the ovum with the uterus of the mother is formed, the ovum being simply

MAMMALIA.

retained for a time within the uterus, and the requisite nourishment for the development of the young animal being obtained by absorption through the membranes of the ovum until birth, which takes place very early in development. The mammalian embryo agrees with that of birds and reptiles in possessing an Amnion (q.v.) and Allantois (q.v.). In all mammals is found the same provision for nourishing the animal during the period immediately after its birth—viz., the Milk (q.v.), a fluid secreted by peculiar glands, called the *mammary glands*, which become greatly developed in the female during the periods of gestation and lactation; and as this is found in no other class, it is the character by which the entire group is most obviously defined, and from which it derives its name: see MAMMA.

The mammary glands exist in both sexes, but except in very rare cases, they secrete milk in the female only. Their number is never less than two, and, when more, is generally nearly proportional to that of the young produced at each birth. In monkeys, the elephant, the goat, the mare, etc., there are two; in the cow, stag, and lion, four; in the cat, eight; in the rabbit, ten; in the

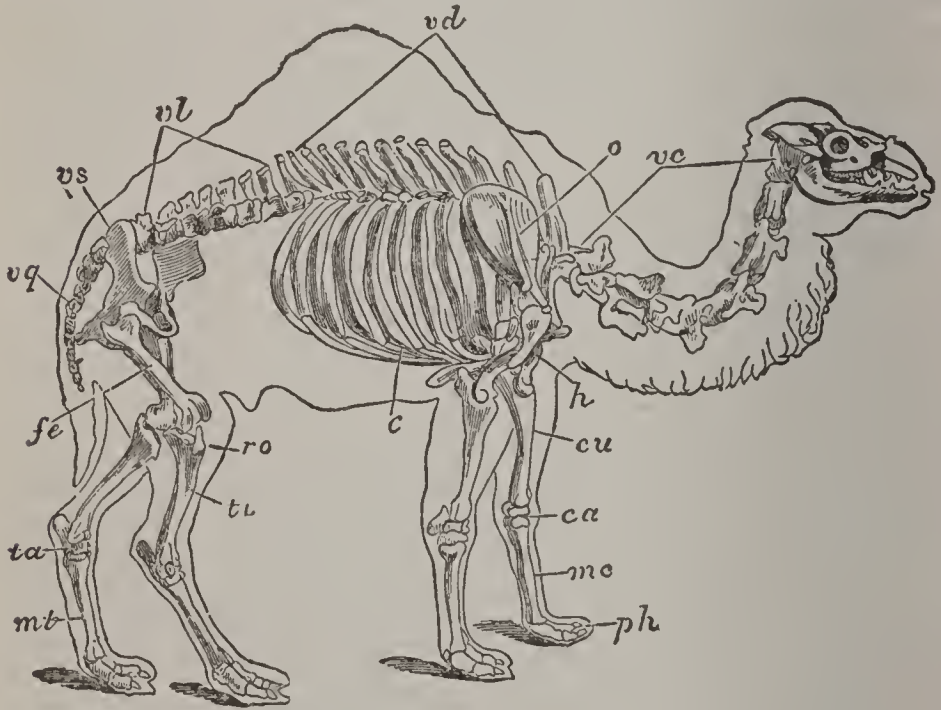


Fig. 1.—Skeleton of the Camel:

vc, cervical vertebræ; *vd*, dorsal vertebræ; *vl*, lumbar vertebræ; *vs*, sacral vertebræ; *vq*, caudal vertebræ; *c*, ribs; *o*, scapula; *h*, humerus; *cu*, bone of forearm (radius and ulna fused together); *ca*, carpus, or wrist-bones; *mc*, metacarpus; *ph*, phalanges; *fe*, femur; *ro*, patella; *ti*, tibia; *ta*, tarsus; *mt*, metatarsus.

pig, generally twelve; and in the rat, ten or twelve. These glands are often blended together, as in the cow; and their number is then indicated externally by that of the nipples or teats. Their position also varies: in the monkeys and bats, and in the Sirenia (see MANATEE), they are on the thorax, as in man; in most of the carnivorous animals, they are on the abdomen as well as on the

thorax; while in the mare, cow, sheep, etc., they are still further back, near the hip-joint.

The *skin* in the greater number of M. is covered with hair, a form of tegumentary appendage peculiarly characteristic of this class. In the Cetacea, however, there is almost entire absence of hair; one of its uses—that of keeping the heat within the body—being here provided for by the thickening of the skin and the deposition of the blubber beneath it. In the Edentata, the hairy covering is almost entirely replaced by horny scales, as in the sealy ant-eater, or by bony plates, as in the armadillo. In the quills of the porcupine and the spiny bristles of the hedgehog are other modifications of hair which depart less from its ordinary character than those above mentioned. Moreover, the claws, nails, and hoofs of all mammals, the horn or horns on the nose of the rhinoceros, and the horns of the hollow-horned ruminants (such as the ox, sheep, etc.), are all composed of more or less similar epidermic structures.

The *skeleton* usually governs the general form of the body. In its general conformation, it shows close analogy with that of man (see SKELETON); the differences which are remarked among various animals of this class mainly depending (1) on the absence of posterior limbs in the marine mammals, such as the dugong, porpoise, and whale; (2) on the diminished number of digits (see HAND and FOOT), and on the absence of the clavicle in the greater number of those species whose anterior limbs serve only for motion; (3) on variations in the number of vertebræ; (4) on inequalities in the relative sizes of the same bones; (5) on variations in the structure of the skull.

Although the same bones enter into the formation of every mammalian skull, great differences present themselves in different skulls, according as the face is more or less prolonged, or, on the other hand, the brain-case or cranium is more or less developed. In proportion as a mammal is removed in classification from man, we find that the cranium is diminished; that the face is prolonged by extension of the jaws and nasal cavities; that the orbits are directed outward and are less distinct from the temporal fossæ; and that the occipital foramen (through which the spinal cord passes) and the condyles (by which the head articulates with the first vertebra of the spinal column) are placed toward the posterior part of the skull, instead of occupying the middle of its inferior surface, as in man. Among the most characteristic points in the mammalian skull generally are: (1), that the lower jaw articulates directly with the skull, without the intervention of a suspensorium, the upper portion of the mandibular and hyoid arches being taken into the internal ear, and forming the malleus and incus; (2) that the skull articulates to the vertebral column by two condyles, the basi-occipital being also ossified.

The *vertebral column*, except in relation to its length, closely resembles that in man, where there are 7 cervi-

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cal, 12 dorsal, 5 lumbar, 5 sacral, and 5 caudal vertebræ. The *cervical vertebræ* are almost universally 7 in number, however long or short the neck may be, the only known exceptions being two *Sirenians* (*Manatus* and *Rhytina*), which have 6, and the three-toed sloth, which has 9. The number of *dorsal vertebræ* ranges from 11 to 23, which latter number occurs in the two-toed sloth. The *lumbar vertebræ* range from 2 to 9, the most common number being 5. The *sacral vertebræ*, which coalesce to form the sacrum and to support the pelvic arch, vary from 2 (in the Monotremata and Marsupialia) to 6 (in the mole), the most common number being 4. In the Cetacea, the rudimentary pelvis is loosely connected with a single vertebra, and there cannot be said to be a sacrum. The *caudal vertebræ*, which in man and the higher apes coalesce to form the *coccyx*, are usually very numerous, 20 or 30 being a common number, and 40 occurring in the long-tailed ant-eater. The form and number of *caudal vertebræ* vary in accordance with the purposes to which the tail is applied; and the special uses of this organ are numerous. For example, in the kangaroo it serves as a third leg when the animal stands erect; in the American monkeys and in some of the opossums it is a prehensile organ; and in the Cetacea and in the beaver it is a powerful instrument of propulsion in water. The *ribs* correspond in number to the dorsal vertebræ, and, as a general rule (excepting in the Monotremata), they are connected superiorly not only with the bodies of two vertebræ, but with the transverse process of one of them, and hence present corresponding articular surfaces. The *sternum* is generally divided into three portions; the middle one, in place of being represented by a single piece, as in man, usually consisting of as many pieces as there are true ribs. It is very short in the Cetacea, and is very long in the Carnivora and Edentata, extending in some cases nearly to the pelvis. In certain cases, in which it is necessary

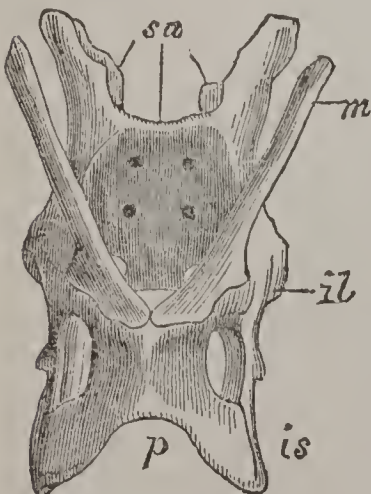


Fig. 2.—Pelvis of Echidna:

sa, sacrum; il, ilium; is, ischium; p, pubis; m, marsupial bone.

that the anterior members should be endowed with unusual strength, as in the bats, moles, and armadillos, there is a projecting keel upon this bone (as in birds) for the attachment of powerful pectoral muscles.

The cavity of the *thorax*, bounded superiorly by the dorsal vertebræ, laterally by the ribs, and inferiorly by the sternum, is completely separated from the abdominal cavity in mammals (but in no other vertebrates) by the muscular septum known as the *diaphragm* or midriff.

The *scapular arch* in mammals is comparatively imperfect, its coracoid element (see CORACOID BONES) not being suf-

ciently developed, except in the Monotremata, to reach the sternum, or to meet its fellow in the mesian line. Where the scapula has any bony connection with the sternum, it is through the clavicle or collar-bone, which is frequently absent. The *pelvic arch* is always composed of the ilium, ischium, and pubis on either side, and these bones generally coalesce, as in man, at an early period of life; but in the Monotremata they remain separate. In the Monotremata and Marsupialia, the pelvis presents two additional bones, termed the marsupial bones, projecting forward and outward, which are, however, simply ossifications of the tendons of the external oblique muscles of the abdomen (see fig.2), and are thus of no special morphological importance. They may aid in supporting the marsupium or pouch, when that is present. In the bat, the pelvis is greatly elongated, and the bones do not unite in the median line to

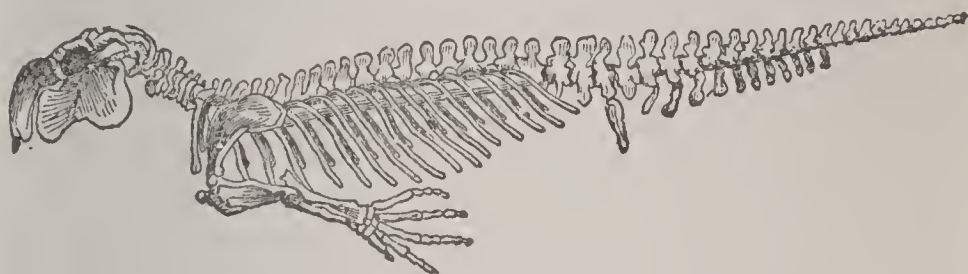


Fig. 3.—Skeleton of Dugong:

In which the pelvis is a mere bony ring.

form a symphysis, so that the lower part remains open, as in birds; while in the Cetacea, which have no posterior limbs to be supported by the pelvis, that organ is extremely rudimentary (see fig. 3), or even entirely absent. As a general rule, the pelvis of mammals is never so broad as in the human subject, and its lateral walls are always relatively smaller, flatter, and longer.

The *anterior extremities* are always present, though their modes of conformation are very varied, according to the purposes for which they are designed; and the *posterior extremities*, also always present, except in the Cetacea, closely resemble the anterior; the difference being greater in man than in any other case, in conse-

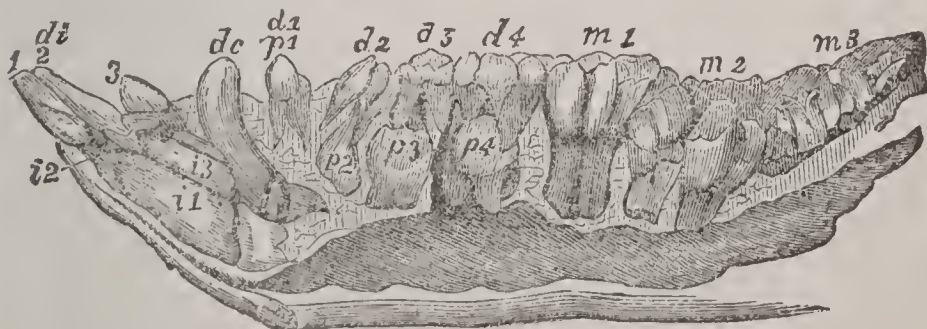


Fig. 4.—Lower Jaw of a Young Pig (from Owen's *Mammalia*):

i indicates an incisor; *c*, a canine; *p*, a premolar; and *m*, a molar tooth. When the letter *d* is prefixed, the tooth is a deciduous or milk tooth.

quence of the special adaptation of the pelvic extremities for the support of his body in an erect position. For the ordinary modifications of these organs, see arti-

cles HAND: FOOT.—See OWEN, *On the Nature of Limbs*.

The *teeth* of mammals constitute so characteristic a feature in their organization, and are of so much service in their classification, as to require special notice. The only animals of this class in which teeth are altogether absent are the true ant-eaters and the Monotremata. The number of teeth is generally much more restricted than in reptiles or fishes. In most mammals it is the same as in man—viz., 32; but the typical number, according to Owen, is 44. The largest number of teeth occurs in the armadillos (in one species of which are 98 simple molars), and in the dolphins, which have 100 to 190 teeth. When the teeth are in these excessive numbers, they are small, nearly equal, and usually of simple conical form, but excepting in these cases, most mammals have particular teeth for special purposes; thus, the front teeth (fig. 4, *i*), from being commonly adapted to effect the first coarse division of the food, are called cutters, or *incisors*, and the back teeth (*m*), which complete its comminution, grinders, or *molars*; while the large conical pointed teeth (of which there is never more than one in each half jaw), which are specially adapted for holding the food while the animal tears it asunder, are called holders, laniaries, or more commonly *canines* (*c*), from being well developed in the dog. The incisors and canines may be absent, but except in the cases previously mentioned, the molars are always present. The mode in which the teeth are implanted in the jaw is characteristic of the class. Excepting in those teeth which grow from persistent pulps (as the front teeth of the Rodents, for example), the dental cavity is closed in at its extremity, and the tooth is prolonged into a fang, which is implanted in a socket lined by periosteum, to which the exterior of the fang is firmly adherent; there being never a continuous ossification or ankylosis of the tooth to the jaw. Again, the fang of the molars is usually divided into two, three, or even four divergent processes, and there is no known fish or reptile in which even a bifid fang occurs. Teeth are confined in this class to the maxillary, pre-maxillary, and lower maxillary bones, and form only a single row in each; and, in general, teeth are situated in all these bones. In all existing mammals, except man, there is a vacant space between the incisor and canine teeth. No mammal has more than two successive sets of teeth; most, however, have two; the first, called temporary, deciduous, or milk teeth, being displaced, and succeeded by the permanent teeth, as shown in fig. 4.—See TEETH: also Prof. Owen's magnificent *Odontography*. The *digestive apparatus* (of which the teeth may be considered a portion) acquires its greatest completeness and elaboration in this group. For the leading differences which it presents, and which depend mainly on the nature of the food, see DIGESTION.

The heart is four-chambered, and the red blood-corpuscles are not nucleated. The single aortic arch lies

on the left side. The diaphragm is complete. See CIRCULATION: RESPIRATION.

The *kidneys* of mammals generally agree with those of man in internal structure: see KIDNEYS. In some animals (especially those that live in water) they are much lobulated. In the ox, there are 20 free rounded lobules; in the bear, 40 or 50; in the seal, 70 or 100; while in the true Cetacea, the separate lobules are so numerous as to give a racemiform appearance to the kidney. All mammals are provided with a urinary *bladder*, in which the excretion may accumulate so as to require being discharged only at intervals. This organ is largest in the Herbivora, and very small in the Cetacea.

The *nervous system* is remarkable for the large size of the brain, and especially of its hemispheres, in comparison with the rest of the nervous system. The surface of the cerebral hemispheres exhibits a more or less convoluted appearance, the number of the convolutions being to a great degree in correspondence with the amount of intelligence of the animal. The hemispheres are united at their lower parts (except in implanental mammals) by a fibrous band or commissure, termed the *corpus callosum*, which does not occur in the other vertebrates. In the lowest mammals, the cerebellum is situated quite behind the hemispheres, so as to be visible from above; in animals higher in the scale, it is more or less covered, in consequence of the prolongation of the hemispheres backward; until in the highest apes and in man it is almost completely concealed.

The *organs of the senses* are constructed on precisely the same plan as in man. For the most important variations, see EAR: EYE: ETC.

The *muscular system* generally accords with that of man, but with many remarkable deviations, according to the form of the skeleton, the use of the several organs in the act of locomotion, the natural posture of the animal, etc.

The reproductive organs open into a cloaca in the embryo, and permanently in Ornithodelphia; in marsupials their openings are included by the anal sphincter, and in the higher M. they are completely distinct.

The class is usually divided as follows:

I. ORNITHODELPHIA, including those mammals which resemble birds and reptiles in the possession of a cloaca and of large coracoid bones, articulating with the sternum. There is no vagina, and the mammary glands are destitute of teats. This group contains only one order, Monotremata (q.v.) and two genera, *Ornithorhynchus* (q.v.) and *Echidna* (q.v.).

II. DIDELPHIA.—In this and the subsequent group, the coracoids are mere processes of the scapula, there is a vagina, and the mammary glands have teats. The special characters of Didelphia are, that the embryo does not become connected with the wall of the uterus by a placenta, and that the vagina is double. There is only one order, MARSUPIALIA, but its members are differentiated into very distinct families (kangaroos, opossums, wombats, etc.), and adapted to very various habits of life.

III. MONODELPHIA.—In this sub-class, the embryo is nourished while within the uterus by a placenta; and the vagina is single. The existing orders are:

MAMMALIA.

1. **EDENTATA** (ant-eaters, sloths, armadillos, etc.).
2. **HYRACOIDEA** (cony, *Hyrax*).
3. **PROBOSCIDEA** (elephant).
4. **UNGULATA**.—A large order divided into two well-marked groups, *Perissodactyla* and *Artiodactyla*; the former including three existing genera (horse, tapir, and rhinoceros), and the latter pigs and ruminants.
5. **SIRENIA**.—An order which includes the Manatee (q.v.), Dugong, and Rhytina; formerly included under Cetacea, but now considered a modification of the Ungulate type in accordance with an aquatic mode of life.
6. **CARNIVORA**.—A large order divided into two groups—(a) *Fissipedia*, including the dog, bear, and cat families; and (b) *Pinnipedia*, sea-lions, walruses, and seals.
7. **CETACEA** (whales, porpoises, etc.).—An order which presents an extreme modification of the Pinnipede type to aquatic habits, and stands in the same relation to *Carnivora* as *Sirenia* to *Ungulata*.
8. **INSECTIVORA** (hedgehogs, shrews, moles).—In many respects the lowest and simplest order of Placental mammals, with the exception of the Edentata.
9. **RODENTIA** (hares, rats, porcupines, squirrels, etc.).
10. **CHEIROPTERA** (bats).—Essentially a modification of the Insectivorous type for purposes of flight.
11. **PRIMATES**: including lemurs, monkeys, apes, and man.

Distribution in Time.—The study of the extinct M. has yielded more important results than any other branch of paleontology—a department of zoölogical inquiry which was indeed initiated by the investigations of Cuvier on the mammalian remains of the Paris basin, and which has continued, in the hands of Owen, Gaudry, Marsh, and many others, to throw remarkable light on the most important problems of zoölogy and geology alike.

The earliest remains known date from the Trias, and others occur sparingly in subsequent periods of the Secondary epoch, but all are of marsupial type. No ornithodelphous mammals have yet occurred in the fossil state, and the affinities of mammals to the lower vertebrate classes remain as obscure as ever. In the Tertiary strata, however, placental mammals occur in great abundance, and the more important ordinal types, Carnivores, Ungulates, etc., are already distinctly differentiated. Within the limits of these orders, however, is found a vast number of ancient forms so perfectly gradated below the definite groups which alone remain at the present day as to indicate a necessity for the conception of regular series where formerly the conception of isolated types was thought adequate.

Taking, e.g., the horse, a Perissodactyle Ungulate so remarkably specialized as to have been considered by Cuvier the type of a distinct order, *Solidungula*, we are now in possession of a complete series of forms connecting it with the lowest and simplest five-toed ungulates. The horse walks upon the terminal joint of the third or middle digit of each limb (the hoof corresponding to the nail), and the only trace of the missing digits is afforded by the skeleton, which shows the rudimentary second and fourth metacarpals and metatarsals as slender bony splints applied to each side of the well-developed corresponding bone of the middle digit. The fibula is rudimentary, and the molar teeth have long crowns, and bear a very complicated and characteristic double-

crescentic pattern. The horse of the later Pliocene period (*Pliohippus*) differed a little from the present genus, chiefly in possessing much better-developed but still rudimentary second and fourth metacarpals, and shorter and less complicated teeth. In the earlier Pliocene strata, however, we find a horse (*Hipparion*) which possessed not only complete, though still slender, second and fourth metacarpals, but even the phalanges of the corresponding digits, which must have dangled beside the large central hoof, without resting on the ground, like the analogous 'dew-claws' of the existing deer and cattle. Its teeth, too, are considerably shorter. Passing downward into the Miocene strata, we find a new genus, *Anchitherium*, in which the second and fourth digits are considerably larger, and a minute rudiment of the fifth metacarpal makes its appearance. The rudimentary fibula, too, is better developed, and the molars have crowns scarcely larger than those of ordinary mammals, and show the equine pattern in a more simple form. Earlier still, we have *Mesohippus*, which differs from its last-named successor chiefly in the better development of its rudimentary fifth metacarpal; while in the Eocene we find *Orohippus*, in which the fifth metacarpal bears a perfect digit, the fibula, too, becoming complete, and the teeth, now 44 instead of 40 in number, yet more simple. Finally, in the Lower Eocene, the equine type is represented in its simplest state by *Echippus*, in which the missing first digit of the fore-limb appears as a rudimentary metacarpal. *Echippus* in turn is closely related to the families of tapirs and Palæotheria, and these in turn to the yet simpler *Coryphodon*, which possessed five complete toes on each foot. Thus not only does the paleontologist possess a series of gentle gradations, from the equine to the primitive ungulate type (for of the six extinct equine genera above named, Marsh has described at least 40 species), but these are arranged in precise stratigraphical order, greater and greater specialization keeping pace with later and later time. Thus the horse, with so complete a pedigree, has become the *cheval de bataille* of the evolutionist, as far at least as relates to the appearance of animal forms in series.

So, too, keeping within the limits of the perissodactyle ungulates, we find the tapirs and rhinoceros families leading back to a common form, the Lower Eocene *Hilletes*; while, starting from the simple *Coryphodonts*, we find strange new families arise, long completely extinct, such as the huge six-horned *Dinocerata* of the Lower Eocene. Passing to the sub-order *Artiodactyla*, we find the allied families of pigs and hippopotami converging in the Eocene; the ruminants, too, lead back to lower and simple forms, some of which closely approach the porcine type. Taking a simple family, that of the deer (*Cervidae*), we find its Lower Miocene representative entirely hornless, that of the Middle Miocene (*Procerulus*) provided with simple non-deciduous horns, while a slightly later form shows a lateral tine, and a 'bur,' showing

MAMMALIFEROUS—MAMMARY GLAND.

that the horn was deciduous; but curiously enough, the bur is placed some way up the horn instead of close to the skull, as in the present forms, showing that a much smaller portion of the horn was shed. The Pliocene deer possess two lateral tines, and it is instructive to notice that, so far as horns are concerned, the three successive types of deer are in the position of the existing deer of the first, second, and third year respectively; while the more complex antlers, with which we are familiar, do not appear until Post-Tertiary times. A similar progressive increase is observable in the brain of all orders of mammals, from the small, low, almost reptilian Eocene type, to the massive and well-convoluted brains of the present fauna.—See MAN.

AUTHORITIES.—ANATOMY—Huxley, *Anatomy of Vertebrated Animals* (Lond. 1871); Nicholson, *Paleontology* (Edin. 1880); Wallace, *Distribution of Animals* (Lond. 1878).

MAMMALIFEROUS, a. *măm'măl-îf'ër-ûs* [Eng. *mammalia*, and L. *fero*, I bear or carry]: containing fossil remains of mammals.

MAMMALOGY, n. *măm-măl'ô-jî* [Eng. *mammal*, and Gr. *logos*, discourse]: the branch of natural history which relates to mammals. MAMMAL'OGIST, n. *-ô-jîst*, one skilled in the knowledge of mammals and their classification.

MAMMALS, etc.: see under MAMMA.

MAMMARY GLAND: organ for secretion of milk in the breasts of mammalia. For the *Anatomy*, see BREAST.

Diseases of the Mammary Gland.—The following are some of the most important:

Acute inflammation of the breast; characterized by great swelling, tenderness, pain, and fever. There is a knotty feeling in the inflamed part, and matter soon forms; but the abscess is often slow in pointing. The affection may occur at any period of lactation, and sometimes arises from very trifling causes—as a loaded state of the bowels, too stimulating a diet, etc. The bowels should at once be cleared out by sharp purgatives; leeches and fomentations should be applied; the arm on the affected side should rest in a sling; and an opening should be made at the spot where matter can be felt. The milk should also be regularly drawn off, if it can be done without extreme pain.

Sore nipples: frequent cause of the preceding disease. Among remedies for excoriations, cracks, fissures, and ulcerations of the nipple, which cause great pain in suckling, are the application of strong astringent lotions (e.g., tannin lotion), touching the sore point with solid nitrate of silver (lunar caustic), and especially the application of collodion. In bad cases, a metallic shield must be placed on the nipple, to protect it from the clothes and from the child's mouth. The regular application of a liniment of rectified spirits and olive oil in equal parts will sometimes prevent this affection.

MAMMEE.

The mammary gland is liable also to *hydatid disease* (see HYDATID), to the morbid growth known as *chronic tumor*, *serocystic disease*, or *glandular tumor*, etc., and to *Cancer* (q.v.).

MAMMEE, n. *mām-mē'*, or MAMMEE APPLE [a native name], (*Mammea americana*): highly esteemed fruit of the W. Indies (where it is sometimes called the *Wild Apricot*) and tropical America. It is produced by a beautiful tree of nat. ord. *Guttiferae*, 60–70 ft. high. The fruit is roundish, from the size of a hen's egg to that of a small melon, with a thick leathery rind, and a very delicate inner rind adhering closely to the pulp, which must be carefully removed on account of its bitter taste. The pulp is firm and bright yellow, with peculiar sweet and very agreeable taste, and pleasant aromatic odor.—A similar fruit is produced by *Mammea africana*, an African species.

MAMMER—MAMMOTH CAVE.

MAMMER, v. *măm'mér* [an imitative word]: in *OE.*, to stand in suspense; to hesitate; to mumble. **MAM'MERING**, imp. **MAMMERED**, pp. *măm'mérd*.

MAMMET, n. *măm'mět* [Swiss, *mammi*, a baby]: in *OE.*, a doll; a puppet. *Note.*—**MAMMET** is not identical with *mawmet*, though constantly confounded with it.

MAMMIFER, n. *măm'mĩ-fér* [L. *mamma*, the breast; *fero*, I bear]: one of the mammals. **MAMMIF'EROUS**, a. *-mĩf'ér-ūs*, having breasts or **MAM'MÆ**, *-mē*.

MAMMIFORM, a. *măm'mĩ-fawrm* [L. *mamma*, the breast; *forma*, shape]: formed as breasts.

MAMMILLARY, a. *măm'mĩl-lér-ĩ* [L. *mammilla* or *ma-milla*, a little breast or teat—from *mamma*, the breast]: pertaining to or resembling the breast or nipples. **MAM'MILLATED**, a. *-lā-těd*, having small nipples; rounded like a teat; studded with rounded or pap-like projections.

MAMMOCK, n. *măm'mők* [an imitative word: Sp. *mamar*, to suck, to devour]: in *OE.*, a piece; a scrap: V. to tear in pieces; to munch and tear as with the teeth. **MAM'MOCKING**, imp. **MAM'MOCKED**, pp. *-mők*t.

MAMMOLA, *măm'mō-lā*: town of s. Italy, province of Reggio, seven and a half m. from Gerace; in a beautiful and fertile dist. on the Locano. Pop. (1881) 6,369.

MAMMON, n. *măm'mön* [Syr. *mamo'na*; Chald. *mamon*, riches—and in the same sense in Syriac; Heb. *matmon*, a hidden treasure]: riches; wealth, generally in an ill sense (Matt. vi. 24; Lk. xvi. 9, 11, 13). By this word Christ does not refer to an actual idol worshipped under that name, but personifies a hidden idol of the heart. **MAM'MONIST**, n. *-mön-ĩst*, or **MAM'MONITE**, n. *-mön-ĩt*, a person who devotes himself to the attainment of riches; a worldly-minded, selfish person.

MAMMOTH, n. *măm'möth* [Russ. *mamant*; Siberian, *mamont*, a mammoth—from Tartar *mamma*, the earth: comp. Ar. *behemoth*, a very large elephant]: the great fossil elephant of Siberia (*Elephas primigenius*), species of very large hairy elephant, now extinct: see **ELEPHANT**—*Fossil Elephants*. The name M. is sometimes given erroneously to the Mastodon (q.v.): **ADJ.** very large. **MAMMOTH'IAN**, a. *-ĩ-ăn*, pertaining to a mammoth.

MAM'MOTH CAVE: in Edmondson co., Ky., near Green r., about 75 m. s.s.w. of Louisville, and 130 m. in the same direction from Lexington. It was discovered 1809, and is the largest known cavern in the world, consisting of a series of cave chambers that has been explored to a distance of 10 m.: the total length of all the chambers and passages is not less than 150 m. It is owned by private individuals, and is but one of a number of similar though smaller caverns extending under entire districts of Ky. and Tenn. M. C. was part of the course of a subterranean river in some past geologic age, which absorbed from the soil much carbonic acid gas; this

MAMMOTH CAVE.

chemically took up quantities of carbonate of lime, and so formed large cavities, on the floor and ceiling of which the carbonate was again deposited, in part, in the forms of stalagmites and stalactites. Thus such caves are successively formed and gradually closed up again. At present M. C. is very gradually decreasing thus, through the deposits of carbonate constantly taking place within its chambers, giving them their varied, beautiful, fantastic, and often grotesque appearance. The entrance to the cave is in the shape of an irregular funnel, 50 to 100 ft. in diameter at the top, with very steep walls. Its interior consists of innumerable wonderful galleries, avenues, chambers, domes, grottoes, and chasms, beside numerous rivers, lakes, and cataracts—the walls, floors, and ceilings of limestone rock in all varieties of shapes, such as chairs, pulpits, organs, rendered more fantastic by the massive stalagmitic and stalactitic formations everywhere present. Among the most interesting chambers are the temple, or chief city, with an area of 4 or 5 acres, and ceiled by a dome of solid rock 120 ft. high. Still higher is Lucy's dome, about 300 ft. high, though only about 60 ft. in diameter. Others are the Mammoth dome and Stella's dome, each not less than 250 ft. in height, and Gorin's dome, about 200 ft. high. The famous Star Chamber is about 500 ft. long by 70 ft. wide, with a ceiling 70 ft. high composed of black gypsum studded with a multitude of white points which, when it is lighted up, have all the effect of stars. Other features are Silliman's avenue, $1\frac{1}{2}$ m. long, from 20 to 200 ft. wide, and 20 to 40 ft. high; Marion's avenue, about the same size; and Proctor's Arcade, a tunnel $\frac{3}{4}$ of a mile long, 100 ft. wide, and ceiled at the height of 45 ft. by a smooth rock. Cleveland's Cabinet is 2 m. long, spanned at the height of about 10 ft. by an arch of fully 50 ft. It is regarded as one of the most beautiful formations in the entire cave, being incrustated by a variety of formations in different colors and all manner of shapes, some delicate as fairy work, some grand and massive as ancient Egyptian sculptures or architecture. The base of it is sulphate of lime, sometimes smooth and of brilliant whiteness, at other places crystallized and glittering like diamonds. The whole is bewildering with its beauty and variety. Of the abysses may be mentioned the Maelstrom and Bottomless Pit, each about 175 ft. deep and 20 ft. wide. Of the considerable bodies of water in the cave, the largest is Echo river, about $\frac{3}{4}$ of a mile long and in places 200 ft. wide, with a depth of 10 to 30 ft. It flows under an arched ceiling 15 ft. high, and connects somewhere with Green r. The river Styx is 450 ft. long, and is spanned by a natural bridge about 30 ft. above it. Lake Lethe, 450 ft. long, varies in depth according to the depth of Green r.; the Dead Sea is somewhat smaller. A number of different kinds of animals and reptiles are found in the cave, such as lizards, frogs, crickets, rats, bats, and various fish washed in from Green r. The most interesting, however, and certainly native in the cave, are the

'blind fish' (*amblyopsis spelæus*), a species of fish without any eyes, and the eyeless cray-fish, besides another fish with rudimentary but entirely sightless eyes. These all are of a bleached, white color, and are held to afford evidence of the theory of natural selection. The atmosphere of the cave is pure and healthful, and of a nearly uniform temperature of 59° throughout the year. For this reason and because of its nitrous quality it was supposed to be specially beneficial to consumptives and asthmatic sufferers, and hence a hotel was built for the accommodation of such in one of the large chambers of the caves: this, however, was abandoned some years ago. The M. C. is believed to have been discovered about 1809, but many years passed before it was wholly explored. It was originally the property of the Yatewood family, by whom it was sold to Messrs. Gratz and Wilkins of Lexington some time prior to 1812. During the war with England (1812-15) these parties used the cave for the manufacture of saltpetre, but after the war this industry was abandoned because of the cheapness of the article imported from E. India. The saltpetre works were within $\frac{1}{2}$ m. of the entrance. The Lexington owners sold the cave to Franklin Gorin, who first opened it to the public as a place of popular resort, and he in turn sold it to Dr. John Croghan of Louisville, who devised it to his nephews and nieces according to the English law of entail, and under his will the property was placed in the care of trustees. As a sanitarium the cave was a failure; consumptives experienced relief while living in the hotel or the numerous boarding-houses created in it, but all benefits disappeared when they returned to the world above. The cave receives a steady flow of sight-seers, but has never had the rush of a popular resort, though a wedding beneath its domes a few years ago temporarily increased interest in it. Several other large caves are not far from M. C.: of these are Proctor's cave, about 3 m. long; and White's cave, Diamond cave, and Indian cave, each about 1 m. long.

MAMUN' (or MAMOUN'), A'BU'L-ABBAS'-ABDAL'LA AL: see AL-MAMUN: also ABBASSIDES, of Bagdad.

MAN.

MAN, n. *mǎn*, MEN, n. plu. *mĕn* [AS. and Goth. *man*, man: Skr. *man*, to think; *manu*, a thinker, man]: a human being; the human race; mankind: see MAN (below); the male sex, as distinguished from *woman*; adult, as opposed to *boy*; a male servant or attendant; in a general sense, any one; an individual brave, strong, and good, as 'be a man': V. to furnish or guard with men; to fortify or strengthen; in *OE.*, to tame a hawk; to attend on as a servant; to point or aim. MAN'NING, imp. MANNED, pp. *mǎnd*: ADJ. furnished with men; guarded with men (see below, MANNING THE NAVY: MANNING THE YARDS). MAN'FUL, a. -*fŭl*, courageous; brave; becoming a man. MAN'FULLY, ad. -*lĭ*. MAN'FULNESS, n. -*nĕs*, the quality of being manful; courageousness. MAN'LIKE, a. -*lĭk*, having the form and appearance of a man; possessing the nature of a man. MAN'LY, a. -*lĭ*, becoming a man; brave; dignified; noble; not boyish or womanish. MAN'LINESS, n. -*lĭ-nĕs*, the qualities of a man; bravery. MAN'HOOD, n. -*hŭd* [*man*, and postfix *hood*: AS. *manhad*]: state of one who is advanced beyond boyhood; human nature; the qualities of a man; courage. MAN'NISH, a. -*nĭsh*, having the appearance of a man; masculine. MAN-HATER, one who hates mankind; a misanthrope. MANKIND', n. -*kĭnd'* [*man*, and *kind*]: the race of human beings; the males of the human race. MAN-MIDWIFE, a medical man who attends women in childbirth. MAN-PLEASER, a flatterer of man. MAN-SERVANT, a male attendant or servant. MAN-STEALER, one who steals and sells men as slaves. TO MAKE A MAN OF, to place in circumstances favorable for advancement in life. MAN-OF-STRAW, a mere puppet or nominee; in *commercial language*, one without sufficient means or substance to undertake moneyed obligations; one put forward to affect a responsibility which he cannot sustain; a poor man. MAN-OF-WAR, armed vessel belonging to a state (see below). MAN OF WAX, a model-man as if formed in wax. MEN-AT-ARMS, a term formerly applied to the better class of soldiers who were fully and heavily armed.—SYN. of 'manly': stout; manlike; firm; undaunted; undismayed; bold; daring; courageous; hardy; stately.

MAN: the human race; mankind; also a human being as typical of the race. For the intellectual and moral nature of man, see the titles pertaining to psychology and ethics—e.g., ANTHROPOLOGY: SOUL: EMOTION: WILL: INTELLECT. MIND: INSTINCT: CIVILIZATION: RELIGION: CHRISTIANITY: GOD. For various races, see ETHNOLOGY. For the constitution of his bodily frame, see BRAIN. NERVOUS SYSTEM: SKULL: SKELETON: MUSCLE: ETC. For physiology see such titles as DIGESTION: NUTRITION: CIRCULATION. For the size and weight of the human infant, see FŒTUS. For proportion of males to females, mean expectation of life, and other particulars, see VITAL STATISTICS.—See also PHILOLOGY: SPECIES: DESCENT OF MAN: MUSCULAR FORCE.

In comparing the human figure with that of the anthro-

MAN.

poïd apes, the animals whose form approximates most closely to that of man, the following are chief points of distinction: The human figure is erect; the feet non-prehensile. The skull is markedly different, being proportionally smaller. The orbits and jaws are relatively smaller in man; the face is more vertically directed; the nasal bones project more beyond the maxilla than in the apes. The most striking distinctions are, however, the very much greater volume of the human brain as compared with the lightest apes, the vastly greater complexity of its convolutions, and the greater size of the cerebrum as compared with the cerebellum. Nevertheless, the most recent classification of mammals (see MAMMALIA) no longer constitutes man an order by himself, but ranks him as a genus (with only one species) of the group of higher animals, the primates, to which belong also the lemurs, monkeys, and apes. However, it is unscientific not to recognize the existence of a range of characteristics by which man is most profoundly and widely distinguished from all other animals—his possession of spiritual faculties and of a responsible moral nature. The fact that Science—i.e., *physical* science—finds these higher faculties too mysterious in their origin to yield themselves to its research, neither constitutes any reproach against that branch of knowledge, nor in the least invalidates the distinguishing characteristics above referred to as pertaining to man. No discoveries of scientific truths regarding man's animal body, its origin, its development, its history, can even touch the question as to his possession of elements beside those that are merely animal. That question must necessarily be referred to the realm of moral and spiritual science, and is inevitably answered by man's consciousness.

Antiquity of Man.—It must be remembered that the current chronology, based on Hebrew traditional interpretation of the Scriptures, is altogether conjectural. The Bible attempts to supply no extended chronology. It is conceded by all Christian scholars that man's history on the earth began probably more than 6,000 years ago; but very few now fix a definite period. From 8,000 to 10,000 years is perhaps a not infrequent conjecture, but it is understood to be mere conjecture, held open to indefinite variation according as facts bearing on the question may come to light. See CHRONOLOGY.

It is evident that the question of man's antiquity on the earth belongs largely in the realm of physical science. Many scientific men—notably Boucher de Perthes, Falconer, Prestwich, and Sir Charles Lyell—have claimed to adduce facts showing a vastly extended period. The archeologist, Boucher de Perthes, found at Abbeville, France, 1836, in undisturbed strata 20–30 ft. under the surface, a large deposit, where the bones of mammoths and rhinoceroses were associated with rudely chipped flint axes, quite different from the smoothly polished stone tools which had long been known. Thus

he was convinced of the contemporaneity of a race of men, ruder than any which had been dreamed of before, with these extinct mammals. In 1863 Lyell ably summarized the existing evidence in his *Antiquity of Man*.—Archeologists have been, and to some extent still are, accustomed to classify antiquities by the aid of the materials of which the contemporaneous implements and ornaments are composed, and thus refer any object to the age of iron, a previous age of bronze, or a yet more remote age of stone. The age of iron is still with us, that of bronze seems to have been comparatively brief, and the geologist has therefore mainly to deal with the relics of the stone age, and the vast changes of the climate and surface of Europe and America in it. Stone implements are found of two classes; one class, deemed the older, showing little variety of form, never ground and polished, but rudely chipped into shape (see FLINT IMPLEMENTS): while those of the later period are varied in form, and generally either ground to a sharp edge or polished all over. Hence the names *Paleolithic* and *Neolithic* are usually applied to the so-called old and new stone ages respectively. But, see BRONZE, AGE OF: CRANNOGS. The excavations which have been made in hundreds of caverns in Britain and on the European continent have yielded results which many scientists have accepted as evidence of the contemporaneity of man with sundry extinct fauna belonging to the early inter-glacial times—even pre-glacial, some have claimed: see KENT'S CAVERN. And a rough approximation to the date of the glacial period, by calculations based on the Precession of the Equinoxes (q.v.), is believed to indicate its close about 100,000 years ago. Also, it is attempted to date approximately certain deposits by calculations based on observed rates of denudation: see DENUDATION: also GEOLOGY.

Meanwhile another school of scientific observers declare the data insufficient for such extreme conclusions; they even question or deny the certainty of some of the principles which are assumed in such use of the data. At present the question as to man's antiquity on the planet seems to be matter of conjecture rather than of knowledge; though with almost universal agreement that the brief chronology long popular is a mistake; also with a rapidly growing conviction that the immense periods commonly assigned to man's antiquity by scientific theorizers of a few years ago are equally mistakes.

Lyell, *Antiquity of Man*; Croll, *Climate and Time*; De Quatrefages, *L'Espèce Humaine*; J. Geikie, *The Great Ice Age and Prehistoric Europe*; Principal Sir J. W. Dawson's *Modern Science in Bible Lands*.

MAN, ISLE OF: in the Irish Sea, n. lat. $54^{\circ} 3'$ — $54^{\circ} 25'$, and w. long. $4^{\circ} 18'$ — $4^{\circ} 47'$; abt. 30 m. w.n.w. from the nearest point of England, 33 m. e. from Ireland; the shortest distance between the island and the adjacent countries being from point of Ayre to Burrow Head in Scotland, 16 n. The length of the island is $33\frac{1}{4}$ m.,

breadth $12\frac{1}{2}$ m.; about 145,325 acres. of which more than 90,000 are cultivated. Pop. (1891) 55,598; (1901) 54,758. At the s.w. extremity is an islet called the Calf of Man, containing 800 acres, a large portion of which is under cultivation. A chain of mountains extends from n.e. to s.w., the highest of which is Snaefell, 2,024 ft.: from its summit, the view is imposing: the picturesque glens and undulating country in the foreground; the rich plains of the n. and s. of the island in mid-distance; and beyond, the Irish Sea, bounded by the high lands of the surrounding countries, on which even the corn-fields may be descried. Several streams take their rise in these mountains. The coast-scenery from Maughold Head on the e., passing s. to Peel on the w., is bold and picturesque, especially in the neighborhood of the Calf, where the shore rises abruptly 1,450 ft. in height. Spanish Head, the s. extremity of the island, presents a sea-front of extreme grandeur.

The greater part of the island consists of clay-slate under various modifications. Through the clay-schist, granite has burst in two localities, in the vicinity of which mineral veins have been discovered, and are extensively worked. Nearly 4,000 tons of lead are extracted annually, as well as considerable copper, zinc, and iron; the lead ore is very rich in quality, as much as 108 oz. of silver having been occasionally extracted from the ton.

The island is divided into six *sheadings*; these into parishes, of which there are 17; these, again, into *treens*; and, lastly, into *quarterlands*. The towns are Castletown (q.v.), Douglas, the modern cap. (q.v.), Peel (q.v.), and Ramsey (q.v.).

Within the past few years great improvements have been made. At Douglas, a beautiful promenade has been erected; also a handsome landing-pier, at a cost of £48,000. Very extensive breakwater and other harbor works have been erected at Douglas. The total expense has been over £200,000. An outer pier and breakwater, constructed of concrete cement blocks, at a cost of about £150,000, was opened 1879. At Ramsey, a public promenade and inclosure on the foreshore have been carried out; and harbor works have been erected both here and at Port Erin, in the latter case at a cost of £77,500. Port Erin harbor is designed especially for the herring-fleet and for the steamers from Ireland, which are expected yet to form a great trade for the island, as a port of call between England and Ireland. Nearly £10,000 has been expended in casing the existing breakwater at Peel. To cover the extensive outlay on harbor works, the consent of the imperial treasury was asked and obtained 1866 for the readjustment of duties on articles imported into the island, such as spirits, wines, tobacco, teas, sugar, etc.

The I. of M. has much interest for the antiquary. Castle Rushen (see CASTLETOWN), probably the most perfect building of its date extant, was founded by

Guthred, son of King Orry, 947. The ruins of Rushen Abbey, dated from 1154, are picturesquely situated at Ballasalla. There are numerous so-called Druidical remains and Runic monuments throughout the island.

The language of the natives is a dialect of the Celtic, and is closely allied to the Gaelic and the Erse or Irish. As a spoken language, it is almost entirely disused.

The climate is remarkable for the limited range of temperature, both annual and diurnal; westerly and s. westerly winds greatly predominate, easterly and n. easterly winds occurring chiefly in the autumn. Myrtles, fuchsias, and other tender exotics flourish throughout the year.

The fisheries afford employment to nearly 4,000 men and boys. More than 700 boats of various tonnage are employed in the herring and cod fisheries, the average annual produce being above £60,000. In addition, a large number of English and Irish boats arrive at the island during the fishing season. Beside the herrings consumed fresh, there are about 40,000 barrels cured. The trade is chiefly coastwise; exports are limited to the products of the island.

Agriculture has of late years made considerable progress. Large numbers of fat cattle are shipped to the English markets, as well as about 20,000 quarters of wheat annually. The manufactures are inconsiderable; but to make up for this, about 130,000 visitors come to the island each season.

The revenue derived from the island amounts to about £50,000 per annum, of which the greater part is from customs duties, and the whole of which, except £10,000 a year payable to the imperial treasury, is used for insular purposes, such as public improvements, education, police, cost of government, etc.

The principal line of communication with the United Kingdom is between Douglas and Liverpool, by a fine fleet of swift steamers. There is a submarine telegraphic cable between Maughold Head and St. Bees Head. In 1873, July, a line of railway was opened between Douglas and Peel; 1874 to Castletown and the s.; 1879 to Ramsey—all on the narrow-gauge system.

Previous to the 6th c., the history of the I. of M. is involved in obscurity; from that period, it was ruled by a line of Welsh kings, until near the end of the 9th c., when the Norwegian, Harald Haarfager, invaded and took possession of the island. According to tradition, in the beginning of the 10th c., Orry, a Dane, effected a landing, and was favorably received by the inhabitants, who adopted him as their king: he is said to have been the founder of the present Manx constitution. A line of Scandinavian kings succeeded, until Magnus, king of Norway, ceded his right in the island and the Hebrides to Alexander III. of Scotland, 1266; this transference of claim being the direct result of the disastrous failure of the expedition of Hacon of Norway against the Scots, 1263. On the death of Alexander, the Manx placed

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themselves under the protection of Edward I. of England by a formal instrument dated 1290; on the strength of this document, the kings of England granted the island to various royal favorites from time to time until 1406, when it was granted to Sir John Stanley in perpetuity, to be held of the crown of England, by rendering to the king, his heirs, and successors, a cast of falcons at their coronation. The Stanley family ruled the island under the title of Kings of Man, until James, 7th Earl of Derby, adopted the humbler title of Lord, on his accession to the government. In 1651 the island was surrendered to a parliamentary force by receiver-general Christian, who had raised an armed body against the government, which was then in the hands of the Countess of Derby. The parliament having thus obtained possession of the island, granted it to Thomas Lord Fairfax. On the Restoration, the Derby family were again put in possession. On the death of James, 10th Earl of Derby, without issue, 1735, James, 2d Duke of Athol, descended from Amelia Sophia, youngest daughter of James, 7th Earl of Derby, became Lord of Man. The Isle of Man having been for a long period the seat of an extensive smuggling-trade, to the detriment of the imperial revenue, the sovereignty of it was purchased by the British govt. 1765, for £10,000 and an annuity of £2,000 a year, the duke still retaining certain manorial rights, church patronage, etc. After negotiation and sales from time to time, the last remaining interest of the Athol family in the island was transferred to the British crown by John, 4th duke, 1829, Jan.; the amount paid for the island having amounted in the aggregate to £493,000.

The I. of M. forms a second bishopric under the title of Sodor and Man. The bishopric of the Sudercys, or Southern Isles, was for a time annexed to Man, hence the title of Sodor, which is still retained, the name having been applied to the islet of Holm Peel, on which the cathedral church of the diocese stands. This bishopric is said to have been founded by St. Patrick 447. The Manx Church has its own canons and an independent convocation. The see is, for certain purposes, attached to the province of York. There are in the island about 30 places of worship in connection with the Established Church of Man. The livings are, with few exceptions, in the gift of the crown. The principal denominations of dissenters are represented in the island.

The I. of M. has a constitution and government of its own, to a certain extent independent of the imperial parliament. It has its own laws, law-officers, and courts of law. The legislative body is styled the Court of Tynwald, consisting of the lieut.gov. and council—the latter being composed of the bishop, attorney-gen., two deemsters (or judges), clerk of the rolls, water bailiff, archdeacon, and vicar-gen.—and the house, of 24 keys or representatives. A bill is separately considered by both branches, and on being passed by them, is trans-

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mitted for the royal assent; it does not, however, become law until it is promulgated in the English and Manx languages on the Tynwald Hill. The house of keys was formerly self-elective; but an act was passed 1866 (amended 1880) establishing an election by the people (with certain qualifications) every seven years. For the armorial bearings of M., see LEES.

See *The Isle of Man, its History*, etc., by the Rev. J. G. Cumming, M.A., F.G.S.; *History of the Isle of Man*, by Joseph Train, F.S.A. Scot.; *Brown's Popular Guide*; and the works published by the Manx Society.

MANAAR, *mâ-nâr'*, GULF OF: between the w. side of the island of Ceylon and Hindustan; divided from Palk's Passage on the n. by the islands Ramisseram and Manaar, and by a low reef called Adam's Bridge. At its n.e. extremity, it is 80 m. in width; at its s.w. limit, nearly 200 miles.

MANACA, *măn'a-ka* (*Franciscea uniflora*, or *Hopeana*): plant of nat. ord. *Scrophulariaceæ*, native of Brazil. The whole plant, especially the root, is of great value in exciting the lymphatic system. It is nauseously bitter, purgative, emetic, emmenagogue, and alexipharmic; in overdoses, an acrid poison. It is much used in Brazil as a remedy for syphilis.

MANACLE, n. *măn'ă-kl* [F. *manicles*, hand-fetters—from *main*, the hand: L. *manica*, the sleeve of a garment, a handcuff—from *manus*, the hand]: a shackle or tie for fastening the hands together; a handcuff: commonly used in the plu. MAN'ACLES, *-klz*, handcuffs: V. to handcuff; to put on fastenings for confining the hands. MANACLING, imp. *măn'ă-klîng*. MANACLED, pp. *măn'ă-klêd*: ADJ. having the hands securely confined or fastened as with manacles.

MANACOR, *mâ-nâ-kô'*: town in the island of Majorca (q.v.), in a fertile plain, 30 m. e. of Palma. It manufactures brimly, wine, and oil. Pop. 10,000.

MANAGE, v. *măv'ăj* [It. *maneggiare*, to manage, to exercise: mid. L. *manăgiūn*, occupation, the furniture requisite for the occupation of a house: OF. *manège*, the managing of a horse: F. *manier*, to handle—from F. *main*; L. *manus*, the hand]: to carry on the concerns of, as a house or business; to conduct or direct; to move or use easily; to control; to govern with address; to contrive. MAN'AGING, imp.: ADJ. that conducts or carries on; governing; conducting with frugality and prudence; intriguing. MAN'AGED, pp. *-ăjd*. MAN'AGER, n. *măn'ă-jêr*, one who conducts or directs anything. MANAGEABLE, a. *măn'ăj-ă-bl*, easy to be used, directed, or moved; that may be controlled; tractable. MAN'AGEABLENESS, n. *-bl-nês*, the quality of being manageable. MAN'AGEMENT, n. *-ăj-mênt*, manner of treating, directing, or carrying on; conduct directed by prudence or contrivance; cunning practice.—SYN. of 'manage': to devise; concert; invent; direct; govern; con-

tol; order; wield; transact;—of 'manageable': governable; docile; controllable; tamable;—of 'management': charge; control; conduct; government; administration; direction; guidance; care; disposal; intrigue; contrivance.

MANAGE, n. *măn'āj* [F. *manège*, the management of a horse (see MANAGE 1 and MANÈGE)]: in *OE.*, conduct; administration; discipline; management; government of a horse.

MANAGUA, *mâ-nâ'gwâ*: town of Central America, cap. of Nicaragua, in a healthy and fertile district on the s. shore of Lake M. or Leon. It owes its position chiefly to the rivalries of the cities of Granada and Leon, but partly to its central situation.

MANA'GUA, LAKE OF: see LEON.

MANAKIN, n. *măn'ă-kin* [F. and Ger. *manakin*: probably a native name]: genus of beautiful small birds, of the ord. *Insectores*, found in tropical America; called also CHATTERER (q.v.).

MANAKIN, n. *măn'ă-kin*, or MANIKIN, n. *măn'î-kin* [F. *mannequin*, a layman, a manikin: Ger. *mannchen*, a little man: Eng. *man*, and *kin*—*lit.*, a little man]: a little insignificant man; a figure on which a student may practice the application of bandages, and also the operations of midwifery.

MANAS'SAS, BATTLES OF: see BULL RUN.

MANASSEH, *ma-năs'sêh* [from Heb. *Nasha*, to forget, signifies 'one who causes to forget']: eldest son of Joseph.—At the Exodus, the tribe of Manasseh is said to have had 32,200 warriors, and on entering Canaan, 52,700. It received land on both sides of the Jordan. The e. half embraced the rich pasture-lands of Argob and Bashan, as far as the slopes of Hermon; the w. extended from the Jordan to the Mediterranean, and lay between Ephraim and Issachar.

MANASSEH, King of Judah (13th king): B.C. 710–645 (reigned B.C. 699–645); succeeded his father Hezekiah. He rushed headlong into all manner of idolatry, and seduced the people to follow his example. The vilest abominations of the sensuous and obscene Babylonian worship, with the fierce cruelties of the Amalekite worship of Moloch, defiled the sanctuary of Jehovah, and were maintained with bloody persecution of those who clung to the holy faith of Israel. The sacred writers cannot otherwise express their sense of the enormity of his guilt than by saying that the very heathen never went so far in their practice of abominations as Judah did in those days. They report almost nothing concerning him: their very silence seems to suggest shame and fear concerning such unparalleled wickedness. M.'s subsequent history is differently related in *Chronicles* and in the *Book of Kings*. The Book of Chronicles records his captivity in Babylon, his repentance, and his return to Jerusalem; the Books of Kings are silent on these

points, though not inconsistent with them. There is reason to deem his reformation only partial. However this may have been, his reign left an abiding evil in the national life.—The apocryphal composition called the *Prayer of Manasses* is received as canonical by the Greek Church.

MANATEE, or MANATI, n. *măn'ă-tē'*, or MANATUS, or LAMANTIN, popularly called the SEA COW [Sp. *manati*—from a W. I. word]: genus of Sirenia, belonging to the *Manatidæ* (q.v.), distinguished by the rounded tail-fin, and further characterized by the presence of small flat nails at the edge of the swimming paws, and by the structure of the grinders, which have square crowns with two transverse ridges. The species, aquatic herbivorous mammals, inhabitants of tropical coasts, feed not only on algæ, but on the plants which grow along the shore, and are rendered accessible to them by the tide. They live chiefly in shallow bays and creeks, and in the estuaries of rivers, and often ascend rivers to a great distance from the sea. The best known species (*M. americanus*) is found in the W. Indies and on the w. coasts of tropical Africa. It has been found with a length of 9 ft.; estimates of its size much beyond this are not trustworthy. The skin is very thick and strong, and almost destitute of hair. The fingers can be readily felt in the swimming paws, and, connected together as they are, possess considerable power of motion, whence the name M. (prob. from Lat. *manus*, a hand). The M. is found usually in herds, which combine for mutual protection when attacked, placing the young in the centre. When one is struck with a harpoon, the others try to tear out the weapon. The females show great affection for their young. No animal is more gentle and inoffensive than the manatee. It has been tamed and rendered familiar enough to come for food when called. Vast numbers were formerly found in places where it is now comparatively rare, as its capture is easy, and its flesh—variously likened to beef and pork—is held in esteem.—Another species is found on the coast of Florida, and a third on the w. coast of Africa. MANATIDÆ, n. plu. *măn-ăt'î-dē*, aquatic herbivorous mammals, including the *manatee*: formerly considered a family of *Cetacea*, including all the herbivorous section of that order, but now ranked as a distinct order, Sirenia; for though by their aquatic mode of life, their external characters, and by the absence of hind-limbs, they greatly resemble *Cetacea*, a more profound study has demonstrated that their affinities are really with Ungulates, while those of *Cetaceans* are with the Carnivora. There are three genera of M., described in the articles DUGONG: MANATEE: STELLERINE.

MANAYUNK, *măn-a-yŭngk'*: suburban part of Philadelphia, in the 21st ward, on the Schuylkill river, near the mouth of Wissahickon creek, and on the Philadelphia and Reading railroad, 7 m. n.w. of Independence

Hall. It is connected with the business centre of Philadelphia by steam and street railroads, steamboats, and an excellent boulevard; has 30 manufacturing establishments, using a capital of \$6,000,000, and yielding products valued at \$10,000,000; contains 8 churches, 1 national bank (cap. \$200,000), water-works, gas and electric-light plants, and post-office and telegraphic facilities; and is noted for its manufactures of paper and cotton and woolen goods, and for its beautiful residences. Pop. (1885) about 10,000.

MANBY, *măn'bi*, GEORGE WILLIAM: 1765–1854, Nov. 18; b. Hilgay, near Downham Market, in Suffolk, England. After studying for the army, he served seven years in the militia, and was appointed barrack-master at Yarmouth 1803. A dreadful series of shipwrecks on a particular day in 1807, when H.M. gun-brig *Snipe* was wrecked within 60 yards of the shore, and 67 lives lost, and when 147 dead bodies were found on about 30 m. of coast, led him to the invention of the apparatus known by his name (see LIFE MORTAR AND ROCKET). 1803, Feb. 12, he succeeded in saving the crew of the brig *Elizabeth*, stranded 150 yards from the shore; he sent a rope over to them by means of a shot, and this rope was the means of pulling a boat from the shore to the brig. A career of usefulness was thus commenced, which he followed through a long life. In 1810 a committee of the house of commons voted £2,000 to M., as a recognition of his services. For the Norfolk and Suffolk coasts, he recommended the establishment of mortar-stations at certain intervals: this recommendation was adopted by the house of commons and the government. Capt. M. received a further grant of £5,000 from parliament 1823; to which were added honorary distinctions from many foreign governments. It was estimated that, by the time of his death, nearly 1,000 persons had been rescued from stranded ships by means of his apparatus. His system has been superseded by one more effective: see LIFE MORTAR AND ROCKET: ETC.



MANCH, or MAUNCH, *mânsh* [Fr. *manche*]: frequent charge in English heraldry, meant to represent a sleeve with long pendent ends, of the form worn by ladies in the reign of Henry I.

MANCHA, or LA MANCHA, *lâ mân'châ*: district of Spain, province of Ciudad Real, and the southernmost part of the kingdom of New Castile: see CASTILE.

MANCHE, *môngsh*: maritime dept. in n.w. France, formed from the most w. dist. of the old province of Normandy; named from La Manche (the English Channel), which washes its coasts: greatest length, 98 m.; average breadth, 27 m.; 1,426,289 acres. Of the entire area, 940,047 acres are cultivated, and about 235,000 acres are in meadow. The surface is irregular; hills of no great elevation traverse it from north to south. The Vire, the Douve, and the Selune are the chief rivers.

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The climate is mild and temperate, but somewhat humid. Flax, hemp, and fruit are extensively cultivated. Immense quantities of apples are grown, from which 44,000,000 gallons of cider are made annually. Horses of the true Norman breed are reared in the pastures, and excellent cattle of large size are bred in the valleys. The dept. is divided into the six arrondissements, St. Lô, Coutances, Valognes, Cherbourg, Avranches, and Mortain. Capital, St. Lô.—Pop. of dept. (1901) 491,372.

MANCHESTER, *măn'chës-ter*: town (incor. 1823) in Hartford co., Conn., on the Hockanum river and the New York and New England railroad; 8 m. e. of Hartford. The township contains the villages of N. Manchester, S. Manchester, Oakland, and Buckland, all of which are noted for their manufactures. S. Manchester has the Cheney silk-works, the most extensive in America, occupying 8 acres and employing 1,000 operatives; and N. Manchester has a number of mills producing book, govt., and bank-note paper. Other manufactures are carriages, cotton and woolen goods, pingshams, and stockinet. Pop. tp. (1880) 6,462; (1890) 8,222; (1900) 10,601.

MANCHESTER, *măn'chës-ter*: town in Essex co., Mass., on the n. shore of Massachusetts Bay, and at the beginning of the s. side of Cape Ann, 8 m. n.e. of Salem, 22 m. by rail n.e. of Boston; on the Cape Ann branch of the Boston and Maine r.r. It has a picturesque and rocky shore, with fine ocean views, and charming inland drives, and there are many beautiful summer homes of Boston business men, especially at Manchester-by-the-Sea. There is a public library. Pop. (1900) 2,522.

MAN'CHESTER: city and cap. of Hillsboro co., N. H.; settled about 1722; incorporated under the name Derryfield 1751; 1810 its name was changed to M. by an act of legislature; 1846 it was granted a city charter. It is mainly on the e. bank of the Merrimac r., about 18 m. s.e. of Concord, and 46 m. n.w. of Boston; and is the largest city in N. H. Of its people, nearly one-third are foreigners and French Canadians. The city is regularly laid out, its main thoroughfare, Elm street, being 100 ft. wide, with elm trees bordering it for a mile on both sides; there are also several large ornamental squares, three of them containing ponds; in the s.w. part is Valley Cemetery, of considerable extent, while two smaller ones are w. of the river. The Merrimac is here spanned by 5 bridges, connecting with the villages of Amoskeag and Piscataquog. M. is the terminus of several railroads, and a principal station on the Concord, and the Concord and Portsmouth r.r. The assessed value of property in the city (1902) was \$33,044,334; while it is the fourth city in manufactures, its water-power being abundantly supplied by the Blodgett canal, built around the Amoskeag falls in 1816, and owned by the Amoskeag manufacturing company, whose reservoir has a capacity of 11,000,000 gallons, which furnishes power for the mills. The 5

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chief corporations engaged in the manufacture of cotton and woolen goods are the Amoskeag Co., organized 1831; the Stark mills, 7 years later; the Manchester mills, 1839; the Langdon mills, 1857; and the Amory mills, 1880. the Langdon mills, 1857; and the Amory mills, 1880. The census of 1900 shows that M. has 577 manufacturing establishments with combined capital \$22,426,125; employed 19,032 persons; paid wages \$7,030,966; value of material used \$14,755,640; value of product \$26,607,600. The chief industry is the manufacture of cotton goods, represented by 4 mills with \$12,699,055 capital; 10,616 employees; paid in wages \$3,553,413; \$5,849,329 for materials, value of product \$11,723,508. These mills have a total of 478,000 spindles and 15,800 looms, which make nearly 300 miles of cloth per day. The principal goods made are tickings, denims, stripes, gingham, sheetings, shirtings, print cloths, balmorals, cotton flannels, cotton duck, delaines, alpacas, etc. There are several churches, of which the Bap., Rom. Cath., Meth., and Congl. are the strongest; and many public school-houses; also a city hall, the county court-house, state reform school with provision for 150 inmates, 2 opera-houses, St. Ann's Rom. Cath. convent and orphan asylum. The city library, founded 1844, made public property 1854, contains more than 32,000 vols. There are 5 national banks with \$750,000 capital, and 6 savings banks with a surplus of \$855,000; 3 daily, 2 semi-weekly, 8 weekly newspapers. The streets are well paved and lighted, and the sewerage is good. Water was introduced 1874, from Lake Massabesick, 4 m. distant and 2,300 acres in extent, at a cost of about \$1,000,000; the reservoir has a capacity of 16,000,000 gallons. There is a well-organized fire dept. and an efficient police force. The city is governed by a mayor, a board of aldermen consisting of one from each ward, and a common council composed of 3 members from each ward. Pop. (1870) 23,536; (1880) 32,630; (1890) 44,126; (1900) 56,987.

MAN'CHESTER: former town in Chesterfield co. (now a city), Va.; on the James river and the Richmond and Danville railroad; opposite Richmond, of which it is a suburb, and with which it is connected by several bridges. It contains 5 churches, 1 national bank, several flour-mills, and important manufactures, including cotton, iron, paper, nails, and tobacco. Pop. (1870) 2,599; (1880) town 5,729; (1890) 9,229; (1900) 9,715.

MAN'CHESTER (Sax. *Mancestre*): city, municipal and parliamentary borough of Lancashire, and the great centre of the cotton manufacture of the n.w. of England; on the Irwell, 32 m. e.n.e. of Liverpool, 188 m. n.n.w. of London by railway. On the w. side of the Irwell is the borough of Salford, communicating with that of M. by 10 bridges, and considered as virtually a portion of the city. The area of the borough of M. is 9.9 sq. m.; of Salford, 7.9 sq. m. Pop. (1891) M. 505,343; Salford 198,136; (1901) M. 543,969; Salford 220,956.

M. was incorporated 1838, Salford 1844. M. was made

a bishopric 1847, and received the title of city 1853. Water for the supply of M. is collected on the Lancashire side of Blackstone Edge. In 1877 the city council adopted the proposal to purchase Thirlmere Lake in Cumberland, and convey the water to M. in an aqueduct 100 m. long. The water-works, in which are invested about £3,750,000, and the gas-works, involving about £450,000, belong to the corporation. The manorial and market rights were also acquired by the corporation 1845, for the sum of £200,000. There are four public markets in M., and two in Salford, besides the cattle-market. Smithfield Market in M. is more than four acres in extent, and is entirely covered. The market-tolls and rents of M. alone amount to £35,000 per annum. The sale of gas makes a profit of some £44,000 per annum, which is devoted to improvements in the borough. In 1845-6 a public subscription founded three parks of about 30 acres each, and the corporation has since acquired a fourth park of about 60 acres. M. was the first borough to take advantage of the Free Libraries Act, which allows an appropriation of a penny in the pound on the local assessment for parks, libraries, and museums; and here also was established the first free lending library in England. Several branch lending libraries and a museum have since been established in M., and a reference library, one branch lending library, and an excellent museum in Salford; so that, including the old college library founded by Sir Humphrey Cheetham, 1662, the people of M. and Salford have the free use of more than 130,000 vols. of ancient and modern literature, besides newspapers and periodicals.

The two boroughs have about 100 churches belonging to the establishment. The cathedral, commonly called the *Old Church*, built 1422, is a very fine Gothic structure, and has latterly undergone extensive restoration in its original style. There are 17 Rom. Cath. and 180 dissenting chapels, some of which, especially St. John's Catholic Cathedral, the Church of the Holy Name, and Cavendish Chapel (Congl.), are very beautiful specimens of modern Gothic architecture. There are 3 Jewish synagogues, 4 German churches, and 1 Greek church. The principal public buildings for secular purposes are the Town Hall, built at the cost of more than a million sterling, in Gothic, the most important municipal building in Great Britain, and perhaps in Europe; the Royal Infirmary, the Royal Exchange, the Royal Institution, all in Grecian style; the Free Trade Hall, in Composite; and the Assize Courts, in decorated Gothic. There is a home for 150 convalescents in the suburbs, founded by Robert Barnes, former mayor of Manchester. Many of the warehouses of the merchants are palatial in appearance, and the business transacted is quite in accordance with the magnitude of the buildings. The floor of the Royal Exchange contains about 5,170 sq. yards, and yet is thronged on market-day, M. has four private and five

MANCHESTER.

joint-stock banks, beside branches of the Bank of England, and the National Provincial Bank. The celebrated Bridgewater canal connects M. with Liverpool, and access is obtained also for heavy barges by the rivers Irwell and Mersey. A great ship-canal from the sea (35 miles long, 172 ft. wide, 26 ft. deep, cost \$75,000,000) was opened 1894, Jan. 1, enabling cargoes especially of cotton, to be delivered at the wharves of M.—avoiding transshipment or railway carriage *via* Liverpool. In Albert square a Prince Albert memorial has been erected. A bronze statue of Richard Cobden stands in St. Ann's square; and there is one of Cromwell (unveiled 1875) at the foot of Victoria street. M. publishes 15 journals and newspapers, five of which are issued daily.

The chief trade is cotton spinning and manufacturing, including calico-printing and bleaching and dyeing; but there are also large manufactures of silk and mixed goods, of small-wares, of machinery and tools, of paper and chemicals; moreover M. is a *dépôt* for all kinds of textile fabrics, and does a very large export trade. There are ordinarily employed in the cotton mills about 60,000 persons, who earn about £30,000 per week in wages. There are at least 7,000 skilled mechanics constantly engaged in the production of steam-engines, spinning-mules, looms, and other machinery, chiefly for the production of the various textile fabrics; their wages average about 32s. each per week, and these need some 1,500 laborers to assist them.

The educational endowments of M. are small compared with its population. There is a hospital school for 100 boys, founded by Sir Humphrey Cheetham, and incorporated by Charles II.; there is also a grammar-school, with about 250 free, and 350 paying pupils, founded 1519, by Hugh Oldham, Bp. of Exeter. According to a school-board return 1873, the number of day-scholars in M. was 38,500 in actual attendance; and in evening schools and literary institutions there are from 4,000 to 5,000 pupils. In 1846, John Owens, a Manchester merchant, left £100,000 to found a college for secular instruction. In 1873, the new building of Owens College (q.v.), the centre of the recently chartered Victoria University, was erected at a cost of about £90,000. M. possesses besides, a Literary and Philosophical Soc., Royal Botanical Gardens, a School of Art, an Acad. of Fine Arts; with Commercial Schools, and a High School for girls; the Lancashire Congl. College, and Bapt. and Wesleyan Colleges. A mechanics' institution was commenced 1824, and is still carried on successfully. It has day and evening classes, a good library, a reading-room, and all necessary appliances for secondary education. Similar institutions on a smaller scale exist in Salford, and in the out-townships of Longsight, Rusholme, Harpurhey, Cheetham Hill, and Pendleton. In M. originated the agitation for free-trade (see ANTI-CORN-LAW LEAGUE). M. was also the first place to secure the privilege of inland bonding for articles chargeable

MANCHESTER SCHOOL—MANCHINEEL.

with customs-duties, and now produces a large revenue from that source.

Camden, who died 1623, says: 'Where the Irk runs into the Irwell, on the left-hand bank, and scarce three miles from the Mersey, stands that ancient town called in *Antoninus* (according to different copies), *Mancunium* and *Manutium*. Perhaps, as an inland town, it has the best trade of any in these northern parts. The fustian manufacture, called *Manchester cottons*, still continues there; this, with a great variety of other manufactures, called *Manchester wares*, renders not only the town itself, but the parish about it rich, populous, and industrious.'—The parish of M. covers a large area, reaching to Stockport, Oldham, and Ashton-under-Lyne, and in the early part of the 16th c. was reckoned to have 20,000 communicants.

MANCHESTER SCHOOL, n.: name applied by those of the opposite view to the early advocates of free trade, whose headquarters were at Manchester, England. Their distinctive tenet was free trade, notably in corn (see CORN LAWS); but through their chief leaders Cobden and Bright, they were identified also with protests against a spirit of militarism which led to their being called the 'peace at-any-price' party.

MANCHET, n. *măn'chët* [F. *manchette*, a wrist-cuff—dim. of *manche*, a sleeve: Scot. *mane*, light white bread: Teut. *mæne*, a fine flour-cake shaped like a half-moon]: in OE., a loaf or cake of fine white bread—named from its size and shape.

MANCHINEEL, n. *măn'shîn-ël* [It. *mancinello*; Sp. *manzanillo*, small apple], (*Hippomane Mancinella*): tropical American tree of nat. ord. *Euphorbiaceæ*, remarkable for the poisonous properties of the acrid milky juice with which every part of it abounds. A drop of this juice, which is of pure white color, burns like fire if it falls upon the skin, and the sore which it produces is very difficult to heal. The Indians of tropical America use it for poisoning their arrows. The fruit is in form, color, and scent not unlike a small apple, and contains a nut about the size of a chestnut. The fluid in the fruit is milder than that of other parts of the tree, but its acidity is so great as immediately to repel any who, tempted by its appearance and citron-like fragrance, ignorantly attempt to eat it. The leaves are alternate, ovate, serrate, and shining. It is said that, owing to the volatile nature of the poisonous juice, persons have even died from sleeping under the shade of the M. tree. Much seems to depend on the state of the atmosphere, and there is good evidence that the rain or dew falling from the branches of the M. does produce injurious effects. The fruit of M., dried and pulverized, is diuretic; the seeds are excessively so. The tree is large and the wood is hard, durable, beautifully clouded, and well suited for cabinet-making. Whole forests of M. at one time existed in Martinique, which have been burned

MANCHOO—MANCHURIA.

down. It grows chiefly in the vicinity of the sea. *Cam-eraria latifolia*, another W. Indian tree, of nat. ord. *Ap-ocynaceæ*, is called BASTARD M., from its resemblance to M. in its poisonous properties.

MANCHOO, or MANTCHU, n. *măn-chô'*: the language spoken in Manchuria, and at the court of China.

MANCHURIA, or MANTCHURIA, *mân-chô'ri-a*: territory in Asia, belonging to the Chinese Empire, but (1903) actually dominated by Russia, despite the protests of China and the opposition of Gt. Britain and Japan; bounded by the Amur on n.; the Usuri and the Sungacha on e., separating it from Russian territory of Orochi; the Shan-Alin range on s., separating it from Korea; and a portion of the Khingan Mts., the river Sira-Muren, and the dist. of the upper Sungari, which separate it on the w., from the desert of Gobi. Previously to the incursions of the Russians on the n., the area of this territory was about 682,000 sq. m.; it is now about 378,000 sq. m.; nearly one-half having passed into the possession of the Russians, who concluded a treaty with the Chinese 1860, Nov. 14, in which was finally made over to them all the territory e. of the Usuri and n. and e. of the Amur. M. is divided into three provinces, Shing-King—formerly Leaotong (pop. more than 2,100,000), and the chief town of which, Mukden, is the seat of govt. for the three provinces—Girin or Kirin, and Tsi-tsi-har, beside Shing-King. The country is mountainous, densely wooded in the s., but consisting chiefly of prairies and grass-land in the north. It is well watered and fruitful in the valleys. The rivers are the Amur (the n. boundary), the Usuri (the e. boundary), and the Sungari, which waters the two provinces Girin and Tsi-tsi-har. The Sungari is about 1,200 m. in length; its banks, the most densely-peopled region of M., are low and fertile, and its general course is n.e. to its junction with the Amur. About 200 m. from its source, it passes the flourishing trading city of Girin, lat. 43° 40' n. (pop. estimated 150,000 to 160,000), inhabited by Manchus and Chinese, but by the latter in far greater numbers. The city of Mukden, on the Sira-Muren, is large and beautiful, surrounded by walls (pop. 200,000). In 1631, it was the seat of the govt. of the empire of Manchu. At the time of the Boxer trouble in China (1900) Russia seized a portion of M., and afterward tried to force China to cede the region to her. China declined, and in 1903 Russia announced that she would hold M. for six years. For history of M., see CHINESE EMPIRE.

The Manchus are the present rulers of China, who gradually subjugated the country; the first emperor of the new dynasty, Shunche, succeeding the last of the Mings 1644. They are not a nomadic race like the Mongols, but are given to agriculture or hunting, according to the country that they inhabit. They are of lighter complexion and slightly heavier build than the Chinese, have the same conformation of the eyelids, but rather

MANCHUS—MANDAMUS.

more beard, and their countenances indicate greater intellectual capacity. Literary pursuits are more esteemed by them than by Mongolians, and they are less controlled by the priesthood. The Manchus, in short, may be regarded as the most improvable race in central Asia, if not on the continent. But at present they are dying out, or at least being merged and lost in the steady growth of the Chinese.—Pop. of M., formerly stated 4,000,000; now estimated 8,500,000.

MANCHUS': an Ural-Altaic people: see MANCHURIA: TUNGUS.

MANCINI, *mân-chě'nē*: Roman family, appearing in history first in the 14th c. Cardinal Francesco Maria M. married (1634) a sister of Cardinal Mazarin. His five daughters Laure (1635–57), Olympe (1639–1708), Marie (1640–1715) Hortense (1646–99) Marie Anne (1649–1714), were noted at the courts of France, Spain, England, and Germany, for beauty, audacity, and intrigue. They were titled and brilliant adventuresses; and more than one of them were suspected, and one was openly charged, with use of poisons on persons whom they desired to remove.

MANCIPLE, n. *măn'sĭ-pl* [L. *manceps* or *mancĭpem*, a head contractor]: the steward of a community, particularly of a college; a purveyor.

MANCUS, n. *măng'kŭs* [AS. *mancus* or *manes*, an old coin of 30 pennies]: an old coin valued at 6s., but said to have been only 2s. 6d. sterling.

MAND: see ELEUSINE.

MANDÆ'ANS, or MENDE'ANS (known also as *Sa'bi-ans* or *Sabæ'ans* or *Nasoræ'ans*): see CHRISTIANS OF ST. JOHN.

MANDALAY, *măn'da-lā*: capital of Burmah (devastated by incendiary fires since the British occupation in 1886), is 3 miles from the Irrawaddy river, a little n. of the former cap. Amarapura (q.v.), and 350 m. n. of Rangoon, the great Burman sea-port. In 1856 its site was occupied by cultivated fields; but having been chosen by the king as the position for a new capital, was in the following year ready to receive the court. The city is laid out in three parallelograms, of which the inner two are walled. Within the inmost are the palace, and offices of govt.; in the second inclosure are the houses of the civil and military officers, and the soldiers; while the outer city is inhabited by the other classes. The climate is unhealthful, and the city is filthy and infested with countless pigs and dogs, which, however, serve as scavengers. M. was mostly burnt 1883. Pop. (1891) 188,815; (1901) 183,816.

MANDAMUS, n. *măn-dā'mŭs* [L. *mandāmus*, we command]: writ issued by the highest court having jurisdiction, in the form of a requirement of some act as the duty of an inferior court, or of a person or corporation. It is granted, not to enforce rights provided for in the

law courts—e.g., ordinary rights of contract; but on occasions for which the law has established no specific remedy. Its issue rests entirely within the discretion of the court. An example of its application is to compel the production of the records and documents of a corporation when they are requisite as evidence in a suit by one of the corporators. M. corresponds to the writ of M. from the king's bench in English law; and in the United States it is also 'a mode of exercising appellate jurisdiction; also a proceeding ancillary to a judgment previously rendered, in exercise of original jurisdiction' (see *Abbott's Law Dictionary*).

MANDANS, *măn'danz*: tribe of American Indians of the Dakota family, located near Fort Berthold, on the upper Missouri river, in the state of N. Dakota, and believed by many writers to be descendants of an early Welsh colony. Nine M. villages were discovered by the whites in the latter part of the 18th c.; in 1803 the M. occupied two villages, one on each side the Missouri river, in the Arickaree country; in 1837 they were nearly exterminated by small-pox; in 1825 and 66 they made treaties with the United States; and since 1870 they have occupied a reservation in common with the Arickarees and Minnetaries. They are light in color, friendly with the whites, live chiefly by agriculture, but do not appreciate civilization. In 1880 they numbered 225; (1884) 311; (1899) 253.

MANDARA, *mân-dâ'râ*, or WANDALA, *wân-dâ'lâ*: kingdom in central Africa, since 1863 a dependency of Bornoo; cap. Doloo. It is surrounded by the Mendefy Mountains, is a fertile, well-watered valley, and is inhabited by negroes of the Mohammedan faith, who raise a famous breed of horses, and manufacture cotton goods and iron articles. The Mandarans are more active and intelligent than the surrounding tribes of negroes, but are regarded by them as cowards. They had a war with Bornoo 1863, in which their former cap., Mora, was destroyed, and on adopting the Mohammedan faith they were guaranteed a semi-independence. Pop. of cap. 30,000.

MANDARIN', v.: in *dyeing*, to give an orange color to silk or wool by the action of nitric acid, which partially decomposes the surface of the fibre.

MANDARIN, *măn'da-rîn*: town in Duval co., Fla., on the e. branch of St. John's river, about 15 m. above Jacksonville. The orange-groves in its vicinity are very fine, and the product is large. In recent years it has become a favorite winter resort for northern people who require a mild, equable climate. Pop. (1900) 1,261.

MANDARIN, *mân'da-rên'* [Port. *mandarin*—from *mandar*, to hold authority—said to be from Malay *mantri*, a counselor: comp. mid. L. *mandāriā*, jurisdiction—from L. *mando*, I command]: general term applied by the western nations to Chinese officers of every grade. It is derived from the Portuguese *mandar*, to command;

MANDARIN DUCK—MANDATE.

the Chinese equivalent is *kwan*. There are nine ranks, each distinguished by a different-colored ball or button on the apex of the cap, by a peculiar emblazonry on the breast, and a different clasp of the girdle. The balls are 1, ruby; 2, coral; 3, sapphire; 4, blue opaque stone; 5, crystal; 6, opaque white shell; 7, worked gold; 8, plain gold; 9, silver. Theoretically, these grades are indicative of relative merit, but as office and titles are sold to a great extent, the competitive examinations, which are the only legitimate road to distinction, have lost much of their value. A M. is not allowed to hold office in his native province, the intention being to prevent intrigue, and to draw to Peking the ambition and talent of the country, where temporary employment is given in subordinate offices, prior to appointments to the provinces. He is not allowed to marry in the jurisdiction under his control, nor own land in it, nor have a near relative holding office under him; and he is seldom continued in office in the station or province more than three years—a system of espionage which serves further to strengthen the imperial government. It is incumbent on every provincial officer to report on the character and qualifications of all under him, which report he periodically transmits to the board of civil office; the points of character are arranged under six different heads, viz.: those who are not diligent, the inefficient, the superficial, the untalented, the superannuated, and the diseased. According to the opinions given in this report, officers are elevated or degraded so many steps in the scale of merit, like boys in a class. They are required also to accuse themselves when remiss or guilty of crime, and to request punishment.

MANDARIN DUCK, *mǎn-da-rēn'*: species of duck brought from China and Japan; brilliant in plumage, green-crested, and with fan-shaped tuft of feathers on the back. These ducks, it is said, after mating once seek no other partners.

MANDATE, n. *mǎn'dāt* [F. *mandat*, charge, mandate—from L. *mandātus*, enjoined, commanded—from *mānus*, the hand; *dārē*, to give—*lit.*, to put into one's hand]: command; order; written authority to act for another; a rescript of the pope: ADJ. applied to the bread distributed to the poor on *Maunday*: see MAUND 1, and MAUNDAY. MANDATORY, n. or MANDATARY, n. *mǎn'-dā-tér-ī*, person to whom the pope has given a mandate or order for a benefice: one to whom a command or charge is given; one who undertakes under written authority to do something for another (see MANDATE, in Law). MANDANT (see MANDATE, in Law). MAN'DATORY, a. containing a command; preceptive; directory.

MAN'DATE, in Law: contract (*mandatum*) in Roman law, in which one party employed another to manage some interest for him gratuitously; one being called a mandant, the other a mandatory. The essentials and the terminology are retained in most of the modern legal

MANDAVI—MANDEVILLE.

systems, though not usually as constituting a distinct form of contract.—In the United States (see Story) *M.* denotes the contract known generally as gratuitous bailment. It is restricted to personal property, and the delivery of something to the bailer is requisite to it. It differs from Deposit (*q.v.*) in the fact that not the custody of the thing deposited, but something to be done respecting the thing, is its principal feature—though custody is involved.

MANDAVI, *mān'da-vē*: chief seaport of the principal-ity of Cutch, Hindustan, on the n. shore of the Gulf of Cutch, lat. 22° 51' n., long. 69° 26' e. Though there is no regular landing-place, boats of any size can land at the sandy beach, and large vessels find secure anchorage in the offing, about three m. from shore. Its wells are numerous, and full of water. Pop. officially estimated (1872) 35,988.

MANDERSON, *mān'dēr-son*, CHARLES FREDERICK: lawyer: b. Philadelphia, 1837, Feb. 9. He received a public-school education; removed to Canton, O., 1856; was admitted to the bar 1859; elected city atty. 1860; entered the Union army as capt. 1861, Apr.; served with distinction in Miss., Ala., Tenn., Ky., and Va.; and resigned with rank of brev. brig. gen. vols. 1865. He then resumed practice of law at Canton; was dist. atty. two terms; removed to Omaha 1869; was city atty. there six years; was elected U. S. senator as a republican 1882; and re-elected 1888. In 1890 he was chairman of the committee on printing, and member of the committees on Indian affairs, milit. affairs, and territories, and the select committees to investigate the condition of the Potomac river-front of Washington and on transportation and sale of meat products.

MANDEVILLE, *mān'dēh-vīl*, JEHAN DE* (known as Sir JOHN): old English traveller: b. St. Albans about 1300; said to have died 1371, Nov. 17. Prompted by curiosity or love of adventure, he left his native country about 1322, and, as his book claims, visited the Holy Land, served under the Sultan of Egypt and the Great Khan of Cathay (China), and after 33 years' wandering, through Europe, Asia, and Africa, returned to England, where he wrote an account of his travels in Latin, French, and English. He is said to have died at Liège 1371; but doubt has been thrown on this; and contemporary confirmation is lacking of even the existence of such a man as the Jehan de M. who claimed to be the writer of his own travels. M.'s work is not of great value for historic geography, as he states not only what came under his own observation, but also what he heard; and he was credulous enough to admit what are now regarded as absurd and monstrous fables; though he (like Herodotus) customarily prefaces these by the phrases 'thei seyne, or men seyn, but I have not sene it.' Besides, several of his statements, formerly regarded improbable, have since been verified. The common notion

of his being pre-eminently a 'lying' traveller is therefore in all likelihood not well founded. Leland the antiquary even says that he had the reputation of being very conscientious; but it has been shown that he took much of his material from older writers not generally read. His book is very interesting, with its quaint, terse, simple style, and its curious subject-matter: it was long exceedingly popular, and was translated into many languages. A ms. of M.'s travels, as old as the time of the author, exists in the Cottonian Library. The first ed. printed in England is that by Wynkin de Worde (Westminster 1499); the last, with Introduction, etc., by J. O. Halliwell, was published in London 1839 (reprinted 1866).

MANDIBLE, n. *măn'dĩ-bl* [L. *mandib'ŭlum*, a jaw—from *mando*, I chew]: the jaw, especially the lower jaw; the instrument of chewing; either jaw of a bird; the jaw of an insect; the beak-like jaw of a cuttle-fish. MANDIBULAR, a. *măn-dĩb'ŭ-lēr*, pertaining to the jaw. MANDIB'ULATE, a. *-ŭ-lāt*, having mandibles; jaw-shaped. MANDIBULATA (or MANDIBULATED or MASTICATING INSECTS), insects (q.v.) having their mouth of the structure described under *Coleoptera*. They comprise the orders *Coleoptera*, *Orthoptera*, *Neuroptera*, and *Hymenoptera*. The *haustellate* mouth—formed for suction—is regarded as a modification, in all its separate parts, of the mandibulate mouth.

MANDINGOES, *măn-dĩng'gōz*: strictly speaking, inhabitants of the most s.-westerly territories belonging to the great w. African race of the Wangarawa (sing. Wangara); inhabiting a district in lat. 8° to 12° n., and between the w. coasts and the head waters of the Senegal and Niger. The name, however, as generally used, is applied to the whole nation of the Wangarawa, comprising a pop. estimated by Dr. Barth 6,000,000 to 8,000,000. The original seat of the M. is said to be Manding, a small mountain country on the e. sources of the Senegal, whence, partly by conquest, partly by emigration, they have spread themselves over a most extensive tract, and now comprise a variety of tribes. The M. are black in color, tall and well shaped, with regular features, and are, generally speaking, a fine race, capable of high civilization and organization, great travelers, fond of trading, and remarkable for industry and energy. Of the neighboring nations, they were the first who embraced Islamism. The greater portion of them are now Moslems, and are zealous propagators of their religion.

MANDIOC, n. *măn'dĩ-ōk*, or MANIOC, n. *măn'ĩ-ōk* [*manihot*, native Indian name]: plant cultivated in tropical Amer. for the fecula contained in the stems, tapioca being one of its products: called usually MANIOC. (q.v.).

MANDOLIN—MANDRAKE.

MANDOLIN, or **MANDOLINE**, n. *măn'dō-l'n*. [It. *mandola*]: very small musical instrument of the lute species. The body of the M. is shaped like a shell, formed of a number of narrow pieces of different kinds of wood, bent into the shape, and glued together. On the open portion of the body is fixed the sounding-board, with a finger-board and neck like a guitar. The Neapolitan M., which is the most perfect, has four double strings, which are tuned, beginning with the lowest, G, D, A, E. The Milanese M. has five double strings, tuned G, C, A, D, E. The sound of the M. is produced by a plectrum in the right hand, while the left hand produces the notes on the finger-board. The M. is used chiefly for accompaniment; in the beauty and quality of its sound, it differs from all other stringed instruments.

MANDORE, n. *măn-dōr'* [F. *mandore*—from It. *mandōra*]: a sort of four-stringed lute or guitar.

MANDRAGORA, n. *măn-drăg'ō-ră* or *măn'dră-gō'ră*: Latin and OE. spelling of the word **MANDRAKE** (q.v.).

MANDRAKE, n. *măn'drāk* [L. and Gr. *mandrag'oras*, the plant mandrake], (*Mandragora*): genus of plants of nat. ord. *Solanaceæ*, nearly allied to *Belladonna* (q.v.). Two species are described by some botanists, the **AUTUMNAL M.** (*M. autumnalis*), which flowers in autumn, and has lanceolate leaves and ovate berries; and the **VERNAL M.** (*M. vernalis*), which flowers in spring, and has oblong-ovate leaves and globose berries. Both are natives of s. Europe and of the East, and are united by many into one species (*M. officinarum*). The root is large and carrot-like, and from it the leaves spring with



Mandrake (*Mandragora officinarum*).

no apparent stem, and among them the stalked whitish flowers. The calyx and corolla are 5-cleft, there are five stamens, and the fruit is a one-celled berry, about the size of a sparrow's egg. The whole plant has a very

MANDREL—MANDURIA.

fetid narcotic smell; but the fresh berries when cut or bruised, have a pleasant odor like that of wine or apples, and two or three may be eaten without inconvenience. All parts of the plant, however, have poisonous properties like those of belladonna, but more narcotic, for which reason a dose of the root was formerly sometimes given to patients about to endure surgical operations. The ancients were well acquainted with the narcotic and stupefying properties of M., and it was a common saying, of a sleepy or indolent man, that he *had eaten mandrake*. The root often divides into two, and presents a rude resemblance to the human figure; and human figures were formerly often cut out of it, to which many magical virtues were ascribed. Sometimes the roots of the bryony were employed instead of those of the M., and sold under the name of *M. root*. From the most ancient times, aphrodisiac virtues have been ascribed to the M., which was therefore supposed to cure barrenness. See Gen. xxx. 14-16. The same reputation has been attached in America to the berries of the nearly allied genera, *Himeranthus* and *Jaborosa*. Many fables connected with the M. are recorded by ancient writers—as that it shrieks when torn out of the ground.

MANDREL, n. *măn'drĕl* [F. *mandrin*, a punch, a mandrel]: the revolving shank of a lathe to which turners affix their work; a round bar on which plumbers form tubing, etc.

MANDRIL, or MANDRILL, n. *măn'drĭl* [F. *mandrille*; Sp. *mandril*]: species of monkey attaining nearly the height of a man, and of extraordinary and hideous appearance; a kind of baboon (q.v.).

MANDU, *mân-dô'*: extensive deserted city of India, in the state of Dhar, in Malwa, lat. 22° 20' n., long. 75° 27' e. The circumference of the ramparts is said to be 37 m. The greatest and least injured of the ruined buildings is the Jama Masjid, or Great Mosque, the area of which is raised several yards above the ground, and is reached by a handsome flight of steps. The mausoleum of Hoshung Ghorî, king of Malwa, is a massive building of white marble. According to Malcolm, M. was founded A.D. 313.

MANDUCATE, v. *măn'dū-kāt* [L. *manducātus*, chewed]: to eat by chewing. MAN'DUCATING, imp. MAN'DUCATED, pp. MAN'DUCABLE, a. *-kă-bl*, that can be chewed. MAN'DUCA'TION, n. *-kă'shŭn*, the act of chewing. MAN'DUCA'TORY, a. *-kă'tĕr-ĭ*, pertaining to or employed in chewing.

MANDURIA, *mân-dô'rĕ-â* (formerly *Castel-Nuova*): town in the Italian province of Lecce, 20 m. e. of Taranto. Pop. about 9,000. It has two celebrated wells, one of which was minutely described by Pliny, and is remarkable for the unalterable level of its waters. Near it stood the town of Manduria, of which relics are extant.

MANE—MANETHÓ.

MANE, n. *mān* [Icel. *mon*; O.Dut. *mane*; Ger. *mähne*; W. *mwng*; Gael. *muing*, a mane]: the long hair on the upper part of the neck of a horse or other animal.
MANED, a. *mānd*, having a mane.

MANEE'SA: see **MANISA**.

MANÈGE, n. *mān-āzh'* [F. *manège*, the management of a horse—from F. *main*; L. *mānus*, the hand: It. *maneggio*, a managing, a handling, a riding-school]: the art of breaking-in and training horses; a school for teaching horsemanship, or for training horses; a riding-school.

MANEH, n. *mā'nā* [Heb.]: a Scrip. weight equal to about 2 lb. 3 oz. troy; in money, equal to 60 shekels of silver, and to 100 shekels of gold.

MANEQUIN, n. *mān'ē-kīn* [a corruption of the familiar term *manikin*, a little man]: an artist's model of wood or wax.

MANES, n. plu. *mā'nēz* [L. *mānēs*]: term used by the anc. Romans for the ghosts, shades, or souls of departed persons: see **LARES**.

MA'NES: another name for Mani or Manichæus: see **MANI**.

MANETHO, *mān'ē-thō*, or **MANETHO SEBENNYTA**: celebrated Egyptian historian: native of Sebennytus, in the Delta, and of the priestly order. He is believed to have lived in the reigns of Ptolemy I. and II., and to have written in the reign of Ptolemy I. (B.C. 323–285), or of Ptolemy II. (B.C. 285–247). According to some, he was priest of Diospolis or Heliopolis; others contend that he was high-priest of Alexandria. His name has been interpreted 'beloved of Thoth;' in the *song* of Lagos and Ptolemy Philadelphus, *Mai en tet*, or *Ma Net*, 'beloved of Neith;' but both interpretations are doubtful. Scarcely anything is known of the history of M. himself, and he is renowned chiefly for his Egyptian annals. On the occasion of Ptolemy I. dreaming of the god Serapis at Sinope, M. was consulted by the monarch, and in conjunction with Timotheus of Athens, interpreter of the Eleusinian mysteries, declared the statue of Serapis, brought by orders of the king from Sinope, to be that of the god Serapis or Pluto; whereupon the god had a temple and his worship inaugurated at Alexandria. The fame of M. was much increased by his writing in the Greek language, and so being enabled to communicate from Egyptian sources a more correct knowledge of the history of his native country than the Greek writers who had preceded him. Of this history, only extracts given by Josephus in his work against Apion, and an epitome by Eusebius and other ecclesiastical writers, remain. It appears to have been written in a compendious annalistic style of narrative, resembling the accounts given by Herodotus. The work of M. was in three books, the first began with the mythic reigns of gods and kings, and ended with the 11th dynasty of mortals; the sec-

ond continued the history from the 12th to the 19th dynasty; the third from the 20th to the 30th dynasty, when Egypt fell under the dominion of Alexander the Great. The reigns of the gods are given as amounting to 24,900 years, and the epoch of Menes, founder of the monarchy, commenced 3,555 years before Alexander (B.C. 332). The difficulties attending the reconciliation of this chronology with the synchronistic history of the Hebrews, Greeks, and other nations, have given rise to numerous speculations and chronological systems since the revival of learning, by Scaliger, Freret, Marsham, Usher, Bunsen, Böckh, Lepsius, Poole, and others. The confusion in which the lists of kings have been transmitted, the ciphers of the lengths of each reign not agreeing with the summations of the durations of the dynasties, and these, again, differing from the total period assigned to the existence of the Egyptian monarchy, has given rise to two or three schools of chronology. The so-called long chronology, which supposes, with Scaliger and Böckh, that the 30 dynasties followed consecutively one after the other, has carried back the epoch of Menes to B.C. 5702. The short chronology, or that which endeavors to square the dates of M. with the dates popularly accepted as developed from the Hebrew chronology (B.C. 4004 for the creation of the world), on the contrary, assumes that several of the dynasties were contemporary, and that some of Manetho's intervals, such as that of the rule of the Shepherd-kings, have been either exaggerated or misunderstood. The accession of newer and better information from the original sources of Egyptian monuments, papyri, and other documents, has considerably enhanced the general value of the history of M., which, prior to their discovery, had fallen into discredit. But the restoration of the history of M., notwithstanding all these resources, and the positive epoch of the monarchy, are still to be sought, though certain dynasties, in the 2d and 3d books of his work, can be reconciled with monumental evidence. Besides the true work of M. above cited, another work, *Sothis*, or the 'Dogstar' (in allusion to the cycle of the heliacal rising of that star of 1461 years) dedicated to Sebastos or Augustus, the title of the Roman emperors, and not found in use before that period, has been handed down. This work seems to have been added by the epitomizers; and another work, called the *Old Chronicle*, in which the history was arranged according to cycles, was compiled by them. Besides the history, M. wrote *Tôn Physikôn Epitome* (Epitome of Physics), treating on the origin of gods and the world, and the laws of morality; and another work on the preparation of the sacred *kyphi*, a kind of frankincense or aromatic food. The astronomical work called *Apotelesmata* is a spurious production of the 5th c. after Christ.

Suidas, *voce* Manetho; Josephus, *Contr. Apion*, I. 3, 9; Bunsen, *Ægyptens Stelle*, Bd. II.; Fruin, *Manethon. Reliq.* (8vo. Leyd. 1847); Böckh, *Manetho* (8vo. Berl. 1845).

MANEUVER—MANFREDONIA.

MANEUVER: see MANŒUVRE.

MANFRED, *măn'frĕd*, King of Naples and Sicily: about 1231–1266, Feb. 26 (reigned 1258–1266); b. Sicily; natural son of Emperor Frederick II. by Blanca, daughter of Count Bonifacius Lanzia. On his father's death, 1250, he received the principality of Tarentum, and in the absence of his half-brother, Konrad IV., acted as regent in Italy. Notwithstanding Konrad's dislike to him, M., with rare fidelity, bravely defended his sovereign's interests against the machinations of Pope Innocent IV.; and after Konrad's death, which the pope accused him of having caused, he was acknowledged regent of Apulia, in name of his nephew Konradin (q.v.). The pope, however, renewed his pretensions to Apulia, and compelled M. to flee for shelter to the Saracens, by whose aid he defeated the papal troops at Foggia, 1254, Dec. 2, and again obtained possession of Apulia, to which he soon added Calabria. The new pope, Alexander IV., caused a crusade to be preached against him; but M. steadily pursuing his victorious career, became, 1257, master of the whole kingdom of Naples and Sicily. On the rumor of Konradin's death, he was crowned king at Palermo, 1258, Aug. 11, and immediately was excommunicated by the pope, together with his adherents, among whom were the first prelates of the kingdom; but M. invaded the papal dominions, levied heavy contributions from them, and made himself master of the whole of Tuscany. His power now seemed secure, and his government was at once mild and vigorous; he founded many schools, built towns and harbors, and labored in many ways for the improvement of his kingdom. But this tranquillity was not of long duration. Pope Urban IV. renewed the excommunication against him and his friends, and bestowed his dominions as a papal fief on Charles of Anjou, brother of Louis IX. of France. M., though at first successful in the war which ensued, was at last treacherously defeated and slain in a bloody battle at Benevento. His widow and children were savagely treated by the French, the daughter being confined for 18, and the sons for 31 years. His body was found some days after the battle and was hastily buried with a heap of stones as its monument. Pope Clement IV. caused it to be dragged out and buried in unconsecrated ground at the frontier of the kingdom, as the body of an excommunicated person.

MANFREDONIA. *măn-frā-dō'nĕ-â*: city of Italy, province of Foggia, 26 m. n.e. of the city of Foggia, founded by Manfred (q.v.), King of Naples and Sicily, from the ruins of ancient Sipontum. It is strongly walled, and an imposing castle protects its port. In the vicinity of M. are remarkable salt lakes—the *Pontano Salso* and the *Lago di Salpi*—the beds of which during the summer heats, are thickly incrustated with salt,—Pop. more than 8,000.

MANFREDO'NIA, GULF OF (*Sinus Urias*): inlet of the Adriatic, which washes the Neapolitan provinces of Bari and Capitanata, 15 m. in length, 30 in breadth.

MANFUL, MANFULLY, MANFULNESS: see under MAN.

MANGALORE, *mǎng-ga-lōr'*: seaport in the dist. of Canara, presidency of Madras, lat. $12^{\circ} 52'$ n. In former times the harbor was good, and the town prosperous, but within the present century the harbor has become to a great extent silted up. The cantonment on the n. side of the town is healthful, being elevated, well drained, and open to the breezes from the sea.—Pop., (1881) 32, 009.

MANGANESE, n. *mǎn'gǎn-ēz* [new L. *manganēsīā*—from L. *magnēs*, the loadstone, so called from its presumed resemblance to the loadstone: OF. and It. *manganese*]: elementary body, forming a metal of a grayish-white color, very hard and difficult to fuse—often applied to the black oxide of the metal forming its peroxide (see below). MANGANESIAN, a. *mǎn'gǎ-nē'zhǐ-ǎn*, pertaining to or consisting of manganese. MAN'GANE'SIUM, n. *-nē'zhǐ-ǎm*, the chemical term for the metal manganese. MAN'GANE'SIA, n. *-nē'zhǐ-ǎ*, the oxide of manganese. MANGANIC, a. *mǎn-gǎn'ik*, denoting the acid obtained from manganese. MAN'GANATE, n. *-āt*, a compound of manganic acid with a base. MAN'GANITE, n. *-īt*, the purest and most beautifully crystallized ore of manganese, of a dark steel-gray color, passing into iron-black; hydrated sesquioxide of manganese.

MAN'GANESE (symb. Mn, eq. 55—spec. grav. 8): one of the heavy metals of which iron may be taken as representative. It is of grayish-white color, with metallic brilliancy, is capable of high polish, is so hard as to scratch glass and steel, is non-magnetic, and is fused only at white heat. As it oxidizes rapidly on exposure to the atmosphere, it should be preserved under naphtha. It occurs in small quantity in association with iron in meteoric stones; with this exception, it is not found native. The metal may be obtained by the reduction of its sesquioxide by carbon at an extreme heat. As a metal it is used in the Bessemer (q.v.) and in other steel processes. M. is a corrective of the ill effects of phosphorus.

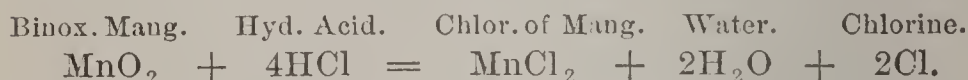
M. forms four different oxides—viz., protoxide (MnO), sesquioxide (Mn_2O_3), the red oxide (Mn_3O_4), the binoxide or peroxide (MnO_2) often called black oxide of manganese. The *protoxide* occurs as an olive-green powder, and is obtained by igniting carbonate of manganese in a current of hydrogen. Its salts are colorless, or of pale rose color, and have strong tendency to form double salts with the salts of ammonia. The carbonate forms the mineral known as manganese spar. The sulphate is obtained by heating the peroxide strongly with sulphuric acid, dissolving the residue in water, and crystallizing. It is employed largely in calico-printing. The silicate occurs in various minerals.

MANGANESE.

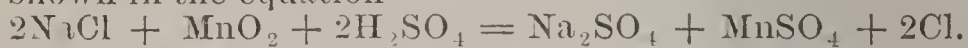
The *sesquioxide* is found crystallized in an anhydrous form in *Braunite* (q.v.), and hydrated in *manganite*. It is obtained artificially as a black powder by exposing the peroxide to a prolonged heat. When ignited, it loses oxygen, and is converted into red oxide. Its salts are isomorphous with those of alumina and sesquioxide of iron: see ISOMORPHISM. It imparts a violet color to glass, and possibly gives the amethyst its characteristic tint. Its sulphate is a powerful oxidizing agent.

The *red oxide* corresponds to the black oxide of iron. It occurs native in *hausmannite*, and may be obtained artificially by igniting the sesquioxide or peroxide in the open air. It is a compound of the two preceding oxides.

The *binoxide*, or *peroxide*, is the black M. of commerce and the *pyrolusite* of mineralogists, and is by far the most abundant of the M. ores. It occurs in hydrated form in *Varvicite* (q.v.) and *Wad* (q.v.). Its commercial value depends on the proportion of chlorine which a given weight of it will liberate when it is heated with hydrochloric acid, the quantity of chlorine being proportional to the excess of oxygen which this oxide contains over that contained in the same weight of protoxide. The reaction is explained by the equation—



When mixed with chloride of sodium and sulphuric acid, it causes an evolution of chlorine, the other resulting products being sodium sulphate and M. sulphate, as shown in the equation—



When mixed with acids, it is a valuable oxidizing agent. It is much used for preparation of Oxygen (q.v.), either by simply heating it, when it yields 12 per cent. of gas, or by heating it with sulphuric acid, when it yields 18 per cent. Besides its many uses in the laboratory, it is employed in manufacturing glass, porcelain, etc.

Manganic acid is not known in a free state. Potassium manganate is formed by fusing together potassium hydrate and binoxide of manganese. The black mass which results from this operation is soluble in water, to which it communicates a green color, due to the presence of the manganate. From this water the salt is obtained *in vacuo* in beautiful green crystals. On allowing the solution to stand exposed to the air, it rapidly becomes blue, violet, purple, and finally red, by the gradual conversion of the manganate into the permanganate; and on account of these changes of color, the black mass has received the name of *mineral chameleon*.

Permanganic acid is known only in solution or in a state of combination. Its solution is of splendid red color, but appears of dark violet tint when seen by transmitted light. It is obtained by treating a solution of barium permanganate with sulphuric acid, when barium sulphate is precipitated, and the permanganic acid re-

MANGE—MANGEL-WURZEL.

mains dissolved in the water. Potassium permanganate, which crystallizes in reddish purple prisms, is the most important of its salts. It is largely employed in analytical chemistry, and is the basis of Condry's Disinfectant Fluid.

M. is a constituent of many mineral waters, and is found in small quantity in the ash of most vegetable and animal substances. It is almost always associated with iron.

Various preparations of M. have been employed in medicine. The sulphate of the protoxide, in doses of one or two drachms, produces purgative effects, and is supposed to increase the excretion of bile; and, in small doses, both this salt and the carbonate have been given with the intention of improving the condition of the blood in cases of anæmia. Manganic acid and permanganate of potash are of great use when applied in lotions (as in Condry's Fluid diluted) to foul and fetid ulcers. Manganic acid is the agent used in Dr. Angus Smith's celebrated test for the impurity of the air.

MANGE, n. *mānj* [F. *mangé*, eaten, fed on; *démanger*, to itch—from *manger*, to gnaw]: the scab or itch in dogs, cattle, etc. MANGY, a. *mān'jī*, scabby. MAN'GINESS, n. *-jī-nēs*, quality or condition of being mangy.—*Mange* in horses, dogs, and cattle, and scab in sheep, are diseases very similar to itch in the human subject; resulting from the attacks of minute mites or *acari*, which burrow in the skin, especially if it be dirty or scurfy, cause much irritation, heat, and itching, and the eruption of minute pimples, with dryness, scurfiness, baldness, and bleaching of the skin. The treatment consists in destroying the *acari* and insuring the cleanliness and health of the skin, both of which objects are effected by washing the parts thoroughly every second day with soft soap and water, and dressing daily with sulphur or mild mercurial ointments, or with a solution containing four grains either of corrosive sublimate or arsenic to the ounce of water. Castor-oil seeds, bruised and steeped 12 hours in butter-milk, are very successfully used by native E. Indian farriers. Where the heat and itching are great, as is often the case in dogs, a few drops of tincture of belladonna may be used with the usual dressing, or applied with a little glycerine. Where the general health is deficient, as in chronic cases, the patient should be liberally fed, kept clean and comfortable, have an occasional alterative dose of any simple saline medicine, such as nitre or common salt, and a course of such tonics as iron or arsenic. Cleanliness and occasional washing and brushing maintain the skin in a healthful state, and thus prevent its becoming a suitable nidus for the *acari*.

MAN'GEL-WURZEL, or MAN'GOLD-WURZEL [prob. fr. Ger. *mangold*, beet; *wurzel*, root]: British and N. Amer. name for the varieties of the common Beet (q.v.) cultivated in fields for food of cattle. M.-W. is much larger than the garden varieties of the beet, and coarser in texture,

MANGEL-WURZEL.

It is more nutritious than the turnip and is nearly equal in value to the carrot for feeding to neat cattle. On rich land the M.-W. is immensely productive: 20 to 40 tons per acre have often been raised, and yields of 80 tons have been reported. The lowest yield named is equivalent in feeding value to about five tons of good hay. It will grow in a variety of soils, but thrives best in a rich and moderately dry loam.

The land for this crop should be plowed in the fall, after receiving a heavy coat of manure, and replowed in the spring. The surface soil should be finely pulverized, and as soon as the ground is reasonably warm and dry the seed should be put in with a drill. The surface must then be made compact by the use of a roller. The seed is deposited usually where the plants are to stand. If this is done, four to six lbs. per acre will be required. Rows should be 30 to 36 inches apart, and, in order to facilitate cultivation, should be made as straight as possible. When transplanting is resorted to, the plants are grown in beds, and when they reach suitable size are set in rows about three ft. apart, and the plants 12 to 16 inches apart in the rows. During the period of growth weeds should be kept down by frequent cultivation. Most of this work can be done with the horse-hoe, but the use of hand-hoes and even hand-weeding must be resorted to if necessary. Frequent stirring of the soil is highly beneficial to the plants, aside from its effect in keeping down the weeds, which are natural enemies. If the plants are too thick in the rows they should be thinned when quite small. Most of the surplus ones can be cut out with a hoe. Too much room should not be given, as it tends to the production of roots of enormous size, which are not as desirable for feeding as smaller roots.—The M.-W. should be harvested before heavy frosts. The tops, which are useful for feeding, are to be cut or twisted off about an inch above the crowns. In pulling and handling them, care should be taken not to bruise the roots or break their large fibres, as this would cause their speedy decay. They may be allowed to dry, but must not remain in the sun long enough to wilt. They can then be placed in large piles, with the crowns outward, and covered with straw or leaves; but before freezing weather comes they should be removed to a cool and well-ventilated cellar or buried in well-drained and carefully prepared pits or trenches. Where the M.-W. is grown in large quantities a root cellar in which to store the crop will prove both convenient and economical.

There are several varieties of the M.-W., differing in form and color and to some extent in the proportion of nutritive matter which they contain. Among the standard sorts are the Orange Globe, the Red Globe, the Yellow Ovoid, and a newer and probably much better variety known as the Golden Tankard. The M.-W. may be fed at any time, but gives better results in mid-winter and spring, when the ripening process has con-

verted much of its starch into sugar, than it does at an earlier period. The roots can easily be kept in good condition until the first of June. They should be fed sparingly at first, and the quantity gradually increased as the animals become accustomed to them.

MANGER, n. *măn'jér* [F. *mangeoire*, an eating-place—from *manger*, to eat: L. *manducārē*, to chew, to eat]: a fixed feeding-trough for horses and cattle; a sort of trough in ships, to prevent the water that enters the hawse-holes from overflowing the decks.

MANGLE, n. *măng'gl* [Dut. *mangelen*, to mangle, to calender: It. *manganella*, a machine for casting great weights: Ger. *mangel*, a calender, a mangle: Icel. *mondull*, the axis of a wheel]: a machine for smoothing linen: V. to smooth linen with a mangle. **MANGLING**, imp. *măng'glīng*: N. the act or business of smoothing linen with a mangle. **MANGLED**, pp. *măng'glđ*: **ADJ.** smoothed with a mangle.

MANGLE, v. *măng'gl* [Bav. *mangel*, a defect, a bodily injury: mid. L. *mangulārē*, to do one an injury: Ger. *mackel*; Dut. *mæckel*; L. *macūla*, a stain, a blemish: comp. Gael. *meangail*, blemished, deformed]: to cut, hew, or hack with a dull instrument; to lacerate; to tear piecemeal; to hack; to curtail. **MANGLING**, imp. *măng'glīng*: N. the act of cutting and slashing. **MAN'GLED**, pp. *-glđ*: **ADJ.** torn and hacked in cutting. **MAN'GLER**, n. *-glēr*, one who tears in cutting.

MANGO, n. *măng'gō* [*mangga*, said to be the native Malay name]: very large Asiatic tree and its fruit. The genus *Mango* (*Mangifera*) is of nat. ord. *Anacardiaceæ*,



Common Mango (*Mangifera indica*).

having flowers with four or five petals, five stamens, of which the greater part are generally sterile, one ovary, seated on a fleshy disk, the fruit a fleshy drupe.—The **COMMON M.** (*M. indica*) is a native of India; a spreading

tree of rapid growth; 30–40 ft. in height, the stem rising only 8–10 ft. before it divides into branches; the foliage so dense as to be impenetrable to the burning rays of the sun, affording a most grateful shade; the leaves lanceolate, entire, alternate, stalked, smooth, shining, leathery, and about seven or eight inches long, with a sweet, resinous smell. The flowers are small, reddish white or yellowish, in large erect terminal panicles; the fruit is kidney-shaped, smooth, varying considerably in size and color, and containing a large flattened stone, which is covered on the outside with fibrous filaments, longest and most abundant in the inferior varieties, some of which consist chiefly of fibre and juice, while the finer ones have a comparatively solid pulp. The fruit of some of the varieties in cultivation is as large as a man's fist. The M. is much prized for the dessert; it is luscious and sweet, with slight acidity. It was introduced into Jamaica 1782, and is now very generally cultivated in tropical and sub-tropical countries. The unripe fruit is made into tarts and pickles. M. kernels are nutritious, and have been cooked for food in times of scarcity. The tree is raised from seeds; the finer varieties are propagated by layering and inarching, and trees obtained in this way often bear much fruit without attaining large size.—Of several other species of M., natives of different parts of the east, the fruits are inferior.

MAN'GO FISH (*Polynemus paradiseus*): fish which inhabits the Bay of Bengal, and ascends the Ganges and other rivers to a considerable distance; accounted one of the most delicious fishes of India, particularly when salted and prepared in a peculiar manner, when it bears the name of *Burtah*. The name M. is given to this fish from its beautiful yellow color, resembling that of a ripe mango; or, as some say, because of its appearance at about the time for ripening of mangoes. Another name is *Tupsee*. It is of perch-like form, and belongs to a genus formerly referred to the Perches (*Percidæ*), now the type of a distinct family of Acanthopterous Teleosteans (*Polynemidæ*), having the ventral fins behind the pectorals, though partially attached to the bones of the shoulder, and the lower rays of the pectorals extended into threads, which in the mango fishes are twice the length of the body. The M. is seldom more than eight or nine inches in length. The genus *Polynemus* contains a number of species of tropical fishes, the air-bladders of some of which are of importance as isinglass; those of *P. indicus*, a fish sometimes 20 lbs. weight, and other species, forming a considerable article of export from Singapore, under the name *Fish-maws*.

MANGOLD: see MANGEL-WURZEL.

MANGONEL, n. *mǎng'gō-něł'*, or MANGON [OF. *mangonel*, a sort of sling or engine—from mid. L. *mangonel'lus*, dim. of *mangona*, a war-engine]: in OE., a war-engine for throwing stones: see BALISTA.

MANGOSTEEN—MANHATTAN.

MANGOSTEEN, n. *mǎng'gō-stēn*, or MAN'GOSTAN, n. -stān [Mal. *mangusta*]: a tree (*Garcinia mangostana*), and its fruit, one of the most delicious of all fruits. The tree is of nat. ord. *Guttiferae* or *Clusiaceae*; native of the Molucca Islands; usually only about 20 ft. high, but of beautiful appearance, having an erect, tapering stem and a regular form, somewhat like that of a fir; the leaves 7 or 8 inches long, oval, entire, leathery, and shining; the flowers large, with corolla of four deep-red petals. The fruit, in size and shape, resembles an orange; it is dark brown, spotted with yellow or gray, has a thick rind, and is divided internally by thin partitions into cells. The pulp is soft and juicy, of a rose color, refrigerant and slightly laxative, with a mixture of sweetness and acidity, and an extremely delicate flavor. It may be eaten very freely with entire safety, and is esteemed very beneficial in fevers. The M. is cultivated in Java and in the s.e. of Asia; it has recently become common in Ceylon, and has been successfully introduced into some other tropical countries.

MANGOUSTE, *mǎn-gōst'*: carnivorous digitigrade quadruped: see ICHNEUMON.

MANGROVE, n. *mǎn'grōv* [a corruption of Mal. *mangle*, and Eng. *grove*], (*Rhizophora*): genus of plants of nat. ord. *Rhizophoraceae*. This order consists of trees and shrubs, all tropical and natives of coasts, particularly about the mouths of rivers, where they grow in the mud, and form a close thicket down to and within the marge of the sea, even to low-water mark. Most of the species send down roots from their branches, and thus rapidly extend over large spaces, forming secure retreats for multitudes of aquatic birds, while crabs are found in vast numbers among the water-washed branches, and shell-fish are attached to them. The order is distinguished by simple, opposite leaves, with convolute, deciduous stipules between the leaf-stalks; the ovary 2-4-celled, each cell containing two or more ovules; the fruit not opening when ripe, crowned with the calyx, 1-celled, 1-seeded. The seeds have the peculiarity of germinating while still attached to the parent branch, a long, thick radicle proceeding from the seed, piercing its covering, and extending rapidly downward, till the fruit falls off, when it is soon imbedded in the mud, into which its club-like form enables it to penetrate. The whole number of species known is only about 20. The fruit of the common M. (*Rhizophora mangle*) is sweet, eatable; and its juice, when fermented, yields a light wine. The bark of the common M. is sometimes exported for tanning.

MANGY: see under MANGE.

MANHADEN: see MENHADEN.

MANHATTAN: city, cap. of Riley co., Kan.; at the junction of the Big Blue and Kansas rivers, on the Chicago Kansas and Nebraska railroad; 51 m. w. of Topeka, 121 m. w. of Kansas City, 143 m. w. by s. of St. Joseph. It contains 5 bridges across the rivers, 11 churches,

MANHATTAN ISLAND—MANI.

State Agricultural College and experimental farm (cost of buildings \$125,000, endowment \$500,000), high school (cost \$25,000), graded school (cost \$15,000), several denominational schools, public library, opera-house, gravity system of water-works, 2 national banks (cap. \$150,000), 1 private bank, excellent limestone quarries, and 4 daily and weekly newspapers. M. was settled by two colonies from Boston and Cincinnati 1855. Pop. (1890) 3,004; (1900) 3,438.

MANHATTAN ISLAND: island on which the greater part of the city of New York stands: see **NEW YORK**.

MANHEIM: see **MANNHEIM**.

MANHOOD: see under **MAN**.

MANI, *mā'nē*, or **MANES**, *mā'nēz*, or frequently **MANICHÆUS**, *mān-ī-kē'ūs* (entitled *Zendik*, Sadducee): founder of the heretical sect of the Manicheans (q.v.): b. (according to the Mohammedan tradition, which is the most probable) 215 or 6; d. 276 or 7. Little is known of his early life; and the accounts transmitted through two distinct sources—the Western or Greek, and the Eastern, or Mohammedan—are legendary and contradictory on almost every important point. The very dubious Greek tradition records him to have been bought as a slave, at the age of seven years, by a woman of Babylonia, who gave him a good education, and at her death made him sole heir. Among her books he is said to have found the writings of Seythianus, given her by one of the latter's disciples. The more probable Eastern tradition shows him of a high Persian family of Ecbatana, carefully educated by his father who in later years was of the sect known as 'Baptists' in s. Babylonia. M. was brought up in their doctrines, which had probably some connection with those of the Elcesaites (q.v.) and certainly with those of the Christians of St. John (q.v.). Both the traditions present him in Persia at the age of 25 or 30, preaching a new religion, or a fantastic philosophy of nature, compounded of elements drawn from various systems, Jewish, Buddhist, Magian, Christian. He claimed at the Persian court that he was the last and mightiest prophet whose advent had been prophesied from old time, the very 'Paraclete' whom Jesus had promised. M. remained in Persia till his 60th year, and changed his former name to obliterate all traces of his origin. Persecuted by King Sapor I. of Persia, he sought refuge in foreign countries, and went as a missionary preaching his new doctrines in India, China, and Turkestan. In Turkestan he lived in a cave twelve months, during which he is said to have been in heaven. He reappeared with a wonderful book of drawings and pictures, called *Erdshenk* or *Ertenki-Mani*. After the death of Sapor (272), he returned to Persia, where Hormuz, the new king, who was well inclined toward him, received him with great honor, and to protect him more effectually against the persecutions of the Magi, gave him the stronghold of *Deshereh*, in Susiana, as a residence. After the death of

this king, however, Behram, his successor, entrapped M. into a public disputation with the Magi, for which purpose he had to leave his castle; and he was seized, flayed alive, and hung before Djondishapur. For his doctrine, etc., see MANICHEAN.

MANIA, n. *mā'nī-ă* [Gr. *manīă*, madness: It. and Sp. *mania*: F. *manie*]: kind of delirium in which both the judgment and memory are impaired; a kind of madness often having much of wild and boisterous excitement (see below). MANIAC, n. *mā'nī-ăk*, a madman; one raving with madness. MANIACAL, a. *mă-nī'ă-kl*, affected with madness. MANIACALLY, ad. *-ă-kăl-lī*. MA'NIA-A-PO'TU, n. *-ă-pō'tū*, madness from drinking; delirium tremens (q.v.). *Note.*—MANIA is also used with reference to anything which happens to be in powerful possession of the public mind.—SYN. of 'mania': madness; insanity; lunacy; frenzy; derangement; alienation; delirium; monomania; dementia; dipsomania; kleptomania; bibliomania; hypochondria; delirium tremens (see these titles).

MA'NIA: the form of mental derangement most familiar to ordinary observers. The excitement and violence by which it is sometimes characterized have become, erroneously and unfortunately, the type and standard by which the disease and persons subject to it have been recognized and treated. These qualities occasionally involved danger to those around, and were always calculated to inspire fear; so that for centuries they were counteracted by repression, coercion and harshness. It is worthy of remark that contemporaneously with the establishment of confidence, and with the introduction of a humane system of treatment, the fury and formidable pugnacity of the insane to a great degree disappeared. (See INSANITY). This effect must, however, in part be referred to that change of type in the nature of the malady itself which is supposed to depend on a modification in the human constitution, as well as on external circumstances, and which has been observable in all affections of an inflammatory character since the beginning of the 19th c. The discontinuance of restraint, and the cessation of necessity for it in asylums, whether regarded as protective or remedial, may be accepted as proof of the reality and extent of this change, whatever may be its cause. It is, moreover, probable that, by the accuracy of modern diagnosis, cases of wild frenzy, depending on fever or inflammation of the brain, have been distinguished from those of true M., and its true features thus better determined. These are loss of appetite, general uneasiness and irritation, watchfulness, headache, restlessness, intense stimulation of the passions and propensities, rapid ideation, incoherence and loquacity, violence or unbridled agitation and extravagance; and, as the disease advances, emaciation, hollowness of the cheeks and eyes, discoloration of the skin, brilliancy and fixity of eyes. However similar these symptoms

may be to what are seen in the fevered and the phrēnetic, great caution must be exercised in concluding that the circulation is involved directly, or at all, for of 222 cases examined by Jacobi, 23 only presented any indications of fever, and in these this condition was attributable to hectic and other causes unconnected with mania. Esquirol rarely mentions the pulse as affording any guidance in this kind of alienation. The true interpretation of these symptoms appears to be, that they are connected with debility and exhaustion; that though, remotely, they may originate in any organ or condition, they proximately depend on impaired nutrition and irritation of the nervous system, calling for support, stimulation, calm, and repose, alike moral and physical. The classification of the various aspects under which M. occurs has been to a corresponding extent regulated by the bodily affection with which it is complicated or associated. Epileptic M., the most furious and formidable, and puerperal M., perhaps the most intractable species, consist in the superaddition of the indications above detailed to certain states of the nervous system, and to that of parturition. Whatever the combination or complication, however, the essential psychical characteristic of M. is, that all mental powers are involved, and are thrown into a state of exaltation and perversion. When the initiatory extravagance and excitement have subsided, when the affection has become chronic, delusions, previously existing, become prominent, and impart a predominating complexion to the condition. It is probable that, wherever delusions or hallucinations are detected, though they may seem solitary deviations from health, there is a broader and deeper substratum of disease, of which they are trivial manifestations; and where M. has ushered in such affections, the original disease may be held to remain while they remain, and to be reacted upon, and, under certain circumstances, roused into activity through their instrumentality. In these views may be found an explanation of those partial mental derangements which appear to coexist with health.—Bucknill and Tuke, *Psychological Medicine—Sketches in Bedlam*.

MANICATE, a. *mān'ī-kāt* [L. *manīcātus*, furnished with long sleeves—from *manīca*, a long sleeve]: in *bot.*, applied to pubescence which is so much matted and interwoven that it may be easily removed from a surface in one mass.

MANICHEAN.

MANICHEAN, a. *măn-î-kě'ăn*: pertaining to *Mani* (q.v.), a Persian, or to his doctrine. **MAN'ICHEAN**, or **MAN'ICHEE**, n. *-kě*, or **MAN'ICHE'IST**, n. *-kě'ist*, follower of *Mani*. **MAN'ICHE'ISM**, n. *-kě'izm*, system of fantastic philosophical doctrines, invented and taught in the 3rd c. as a religion by Mani, or Manes, or Manichæus: see **MANI**. Though the Manicheans utterly disclaimed the name Christian, yet they have commonly been reckoned among the heretical sects of the church. It was intended to blend the chief dogmas of Parsism, or rather Magism, as reformed by Zoroaster, with a certain number of Buddhistic views, under the outward garb of Biblical, especially New Testament history, which, explained allegorically and symbolically, was made to represent an entirely new religious system, and one utterly contradictory to Christianity and its fundamental teachings. 'At the close of the 3d c. three great religious systems stood opposed to one another in w. Asia and the s. of Europe; these were Neo-Platonism, Catholicism, and Manicheism. All three may be described as the final results reached, after a history of more than a thousand years, by the religious development of the civilized nations stretching from Persia to Italy. . . . Each had appropriated elements of older and widely different religions. . . . Neo-Platonism was the spiritualized religion of nature, Greek polytheism transfigured and developed into Pantheism through Oriental influences and philosophical speculations; Catholicism was the monotheistic universal religion, based on the Old Testament and the Gospel, but built up with the resources of Hellenic speculation and ethics; Manichæism was the dualistic and universal religion, founded on Chaldaism, but charged with Christian, Parsic, and perhaps Buddhistic ideas.' (Prof. Adolph Harnack, *Enc. Brit.*, 9th ed.)—Manicheans assumed, above all, two chief principles, whence had sprung all visible and invisible creation, and which—totally antagonistic in their natures—were respectively styled the Light, the Good, or God, and the Darkness, the Bad, Matter, or Archon. They each inhabited a region akin to their natures, and excluding each other to such a degree that the region of Darkness and its leader never knew of the existence of that of the Light. Twelve æons—corresponding to the 12 signs of the zodiac and the 12 stages of the world—had sprung (emanated) from the Primeval Light; while 'Darkness,' filled with the eternal fire, which burned but shone not, was peopled by 'demons,' who were constantly fighting among themselves. In one of these contests, pressing toward the outer edge of their region, they became aware of the neighboring region, and forthwith united, attacked it, and succeeded in carrying captive the Ray of Light that was sent against them at the head of the hosts of Light, and which was the embodiment of the Ideal or Primeval Man (Christ). A stronger æon, however (the Holy Ghost), hurried to the rescue, and redeemed the greater

and better part of the captive Light (Jesus Impatibilis). The smaller and fainter portion, however (Jesus Passibilis), remained in the hands of the powers of Darkness; and out of this they formed, after the ideal of *The Man of Light*, mortal man. But even the small fraction of light left in him (broken in two souls) would have prevailed against them, had they not found means to further divide and subdivide it by the propagation of this man (Eve—Sin). Not yet satisfied, they still more dimmed it by burying it under dark ‘forms of belief and faith, such as Paganism and Judaism.’ Once more, however, the Original Light came to save the light buried in man, in the person of Christ, descending from the sun, with which he is one. The demons succeeded, however, in cutting his career of salvation short by seducing man to crucify him. His sufferings and death were, naturally, only fictitious, since he could not in reality die; he only allowed himself to become an example of endurance and passive pain for his own, the souls of light. Since, however, even his immediate adherents, the apostles, were not strong enough to suffer as he had bid them, he promised them a Paraclete, who should complete his own work. This Paraclete was Mani, who surrounded himself, like Christ, with 12 apostles and sent them into the world to teach and to preach his doctrine of salvation. The end of the ‘world’ will be fire, in which the region of Darkness will be consumed and utterly annihilated. To attain to the region of eternal light, it is necessary that Passion, or rather the Body, should be utterly subdued; hence rigorous abstinence from all sensual pleasures—asceticism to the utmost degree—is to be exercised. The believers are divided into two classes—the Elect and the Auditors. The Elect have to adhere to the *Signaculum Oris, Manus, and Sinus*, that is, they have to take the oath of abstinence from evil and profane speech (including ‘religious terms such as Christians use respecting the Godhead and religion’), further, from flesh, eggs, milk, fish, wine and all intoxicating drinks (cf. Manu, *Insti.* vv. 51, 52, 53: ‘He who makes the flesh of an animal his food . . . not a mortal exists more sinful . . . he who . . . desires to enlarge his own flesh with the flesh of another creature,’ etc.); further, from the possession of riches, or, indeed, any property whatsoever; from hurting any being—animal or vegetable; from heeding their own family, or showing any pity to him who is not of the Manichean creed; and, finally, from breaking their chastity by marriage or otherwise. The Auditors were comparatively free to partake of the good things of this world, but they had to provide for the subsistence of the Elect, and their highest aim also was the attainment of the state of their superior brethren. In this Manichean worship, the Visible Representatives of the Light (sun and moon) were revered, but only as representatives of the Ideal, of the Good or supreme God. Neither altar nor sacrifice was to be found in their places of religious

MANICHORD—MANIFEST.

assemblies, nor did they erect sumptuous temples. Fasts, prayers, occasional readings in the supposed writings of Mani, chiefly a certain *Fundamental Epistle*, were all their outer worship. The Old Testament they rejected unconditionally; of the New Testament, they retained certain portions, revised and redacted by the Paraclete. (August. c. Faust., book xviii.; cf. book ix.). Sunday, as the day on which the visible universe was to be consumed, the day consecrated to the sun, was kept as a great festival; and the most solemn day in their year was the anniversary of the death of Mani. Baptism and the Lord's Supper were celebrated as mysteries of the Elect. Of this mode of celebration, however, we know almost nothing; even Augustine, who, for about nine years, belonged to the sect, and who is our chief authority on this subject, confesses his ignorance of it. As to the general morality of the Manicheans, we are equally left to conjecture; but their doctrine certainly appears to have had a tendency, chiefly in the case of the uneducated, to lead to a sensual fanaticism hurtful to a pure mode of life.

The outward history of the sect is one of almost continuous persecution from 296; yet their adherents were numerous; and many mediæval sects, Priscillians, Katharenes, Josephinians, etc., were suspected to be secretly Manicheans. The sect did not disappear entirely until the time of the Reformation.

MANICHORD, n. *măn'î-kawrd* [L. *mănus*, the hand, and Eng. *chord*]: a musical stringed instr. whose strings were covered with little pieces of cloth to soften or subdue the sounds.

MANICURE, n. *măn'î-kûr*: one whose business is the care and treatment of the hands, especially the finger-nails. V. to take care of or treat hands and nails.

MANIFEST, a. *măn'î-fĕst* [F. *manifeste*—from L. *manifestus*, clear, plain—from *mănus*, the hand, and obsolete *festus* or *fendtus*, struck: It. *manifesto*]: clear; evident; plain; apparent: N. an invoice of a cargo of goods for examination at the custom-house: V. to show plainly; to reveal or declare. **MAN'IFESTING**, imp. **MAN'IFESTED**, pp. **MAN'IFES'TABLE**, or **MAN'IFES'TIBLE**, a. *-tĭ-bl*, that may be manifested. **MANIFESTA'TION**, n. *-tă'shŭn*, the act of disclosing what is secret or obscure; clear evidence. **MAN'IFESTLY**, ad. *-lĭ*, clearly; plainly. **MANIFESTO**, n. *măn'î-fĕs'tŏ* [It. *manifesto*, public declaration of a prince or state]: public written declaration issued by a sovereign prince or by a government on some state emergency, expressive of intentions, opinions, or motives. Immediately before entering on a war, a manifesto is issued containing a statement of the reasons which have been held to justify the sovereign or government in taking up arms. In case of a revolt, a manifesto is sometimes issued to recall subjects to their allegiance.—**SYN.** of 'manifest, a.': open; visible; conspicuous; obvious;—of 'manifest, v.': to show; declare; exhibit;

MANIFOLD—MANILA.

represent; evince; make known; display; discover; disclose.

MANIFOLD, a. *măn'î-fôld* [*many* and *fold*]: many in number; of various kinds; oft repeated; complicated. MAN'IFOLDLY, ad. -li. MANIFOLD-WRITER, a writing apparatus for taking several copies at once.

MANIGAULT, *măn-ê-gô'*, GABRIEL: 1704, Apr. 24—1781, June 5; b Charleston: patriot. He was educated for commercial business and followed it through life, acquiring a large fortune, which he invested in rice plantations and slaves. He was treas. of the province of S. C. 1738; advanced \$220,000 for its defense 1776; joined the army, notwithstanding his age, at the siege of Charleston 1779; and bequeathed \$25,000 to the S. C. Soc. of Charleston.

MANIHOT, *măn'î-hôt*, or MANIHOC, n.: see MANDIOC.

MANIKIN, or MANNIKIN, n. *măn'î-kîn* [O. Dut. *manneken*, a little man: a diminutive of *man*: *man*, and *kin*, little]: a little man, generally in contempt; an anatomical model: see MANAKIN 2.

MANIL, n. *măn'îl*: the same as Manilio (q.v.).

MANILA, *mâ nê'lâ*: city, cap. of the Philippine Islands (q.v.); in the island of Luzon, on the banks of the river Pasig, and at the embouchure of that river in the Bay of M. It is divided by its river into M. Proper and Binondo. M. Proper, or the *city* of M., consisting of 17 spacious streets, crossing at right angles, contains the cathedral; the *Palacio*, built 1690; the Archbishoppal Palace, the Hall of Audience, 11 churches and 3 convents, besides public offices, barracks, and other military establishments. Beyond the ramparts, on the e. side, is the Calzada, or public promenade, crowded in the evening by carriages and equestrians. The bay and harbor of M. are magnificent, and the Pasig is navigable for ten miles. The trade is chiefly with the United States, Great Britain, China, and Australia. The principal exports are sugar, abac'a (Manila hemp, see ABACA), cigars, leaf-tobacco, coffee, rice, and fine woods. The imports consist chiefly of woven goods from Manchester and Glasgow, with lead, iron-ware, and beer; silks, nankins, vermilion, and curiosities are imported from China. The cheroots of M. are famous. Their manufacture is under the charge of an administration whose headquarters are at M.; 20,000 persons are employed in this manufacture. The climate is healthful and the temperature averages 82°. Earthquakes occur frequently and are very destructive. In 1882 the city suffered from a cholera epidemic, followed by a typhoon which did much damage. During the SPANISH-AMERICAN WAR (q.v.) the city of M. was brought into prominence through the destruction of a Spanish fleet (1898, May 1) under Admiral Montojo, by an American fleet, under Commodore Dewey, who had forced his way past the batteries at the entrance of the Bay of Manila and attacked the Spaniards off Cavité, a suburb of M. Dewey sank twelve Spanish vessels in this engagement, and also captured the arsenal and shore batteries, without the loss of

a single man. A blockade of the port was instituted and successfully maintained throughout the war. On May 12 the Spanish gunboat *Callao* was captured while attempting to run the blockade, and a few days later a German vessel attempted to effect a landing and was assisted in its efforts by the German consul, who threatened to use force. This attempt was frustrated by Admiral Dewey, who informed the consul that he would open fire on any vessels trying to land cargo. The political situation at Manila became somewhat involved during the month of June when the Filipino insurgents in strong force surrounded the city and captured 2,500 Spaniards. This was not simplified by the attitude of the German authorities, who made an unfriendly demonstration in Subig Bay, but who withdrew as soon as two vessels from the U. S. squadron were despatched there. On June 28 Gen. Merritt of the U. S. army sailed with a military expedition from San Francisco to take command of the land forces at M., and arriving July 29 immediately invested the city. The Spaniards attempted a sortie at Malate, near M. (31st), but were repulsed by the American troops. After a short, sharp engagement by land and a bombardment by Admiral Dewey's fleet the city surrendered to the Americans, Aug. 13. Some days before Aguinaldo, the Filipino leader, declared himself president of the Philippines, and prepared to resist the military occupation of the Americans. Having conquered the Spaniards, the American commander found it necessary to commence active operations against the native rebels who refused to lay down their arms, and the military and naval operations during the rest of the year were glorious to American arms. The rebel forces suffered defeat after defeat, and their capital is now (1899, April) occupied by American troops. M. is one of the four ports of the Philippine archipelago open to foreign vessels. The value of exports from M. is, annually, \$28,000,000, one-fourth of which is taken to England, and of imports a little less. Pop. about 270,000.

MANILIO, n. *mă-nîl'yō*, or MANIL'LA, n. -lă [Sp. *manilla*, a small hand, a handcuff: It. *maniglio*, a bracelet]: a ring or bracelet worn by persons in Africa; a piece of copper somewhat like a horse-shoe, used as money on some parts of the African coast.

MANILLA, n. *mă-nîl'a*, or MANILLA-HEMP: a coarse fabric woven from cocoa or palm fibre—so called from *Manila*, the capital of the Philippine Islands; the fibrous material of the *Musa textilis*, ord. *Musacææ*.

MANIN, *mă-nēn'*, DANIEL: Italian patriot: elected during the revolution of 1848, pres. of the Venetian Republic; 1804–1857, Sep.; b. Venice. He graduated at the Univ. of Padua, was admitted doctor of laws at 19 years of age. From 1831 he became a recognized leader of liberal opinion in Venice; in 1847, his reputation as a political economist was established during the sittings of the scientific congress at Venice; and soon afterward he was imprisoned for a spirited public address.

Before the revolution of 1848, M. was again incarcerated; but on receipt of the news that Paris, Naples, and Tuscany had revolted, he was released by the populace, and invested with supreme power. The organization of a civic guard, and the expulsion of the Austrians from the arsenal, were M.'s first public measures. From the period of his election M.'s energies were devoted to the organization of the inhabitants for self-defense. During the annexation of Lombardy to Piedmont, M. laid down his authority; but on the defeat of the Sardinian army at Novara, 1849, Mar. 23, he resumed it, and was the animating spirit of Venice during the heroic defense of the city for four months against the Austrian army. Aug. 24, Venice capitulated; but M., with 40 of the principal citizens, being excluded from all stipulations, quitted the city. He retired to Paris, where he taught his native language, declining innumerable offers of aid, and where he died of heart-disease.

MAN'IOC, or MAN'DIOC, or CASSA'VA (*Manihot utilisima*, formerly known as *Jatropha manihot*, and as *Janipha manihot*): large, half-shrubby plant of nat. ord. *Euphorbiaceæ*, native of tropical America, and much cultivated there. It is now also extensively cultivated in Africa, and has been introduced into other tropical countries. M., or *Mandioca*, is the Brazilian name; *Cassava*, the W. Indian; and in Peru and some other parts of S. America, the name is *Juca* or *Yucca*. The plant grows in bushy form, with stems usually 6-8 ft. high, sometimes much more. The stems are white, brittle, and have a very large pith; the branches are crooked. The leaves are near the extremities of the branches, large, deeply 7-parted. The roots are very large, turnip-like, sometimes weighing 30 lbs., from three to eight growing in a cluster, usually 12 to 24 inches long. In common with other parts of the plant, they contain an acid milky juice, so poisonous as to cause death in a few minutes; but as this is owing to the presence of hydrocyanic acid, which is quickly dissipated by heat, the juice, inspissated by boiling, forms the excellent sauce called CASAREEP (q.v.); and fermented with molasses, it yields an intoxicating beverage called *Ouycou*; while the root, grated, dried on hot metal-plates, and roughly powdered, becomes an article of food, very largely used in S. America, and there very generally known as *Farinah* (Portug. meal). It is made into thin cakes, which are formed, however, not by mixing it with water, but by the action of heat softening and agglutinating the particles of starch. These cakes are sometimes called *Cassava* or *Cassada Breud*. It is also exported to some European countries for use in manufactories as starch. The true starch of M., separated in the ordinary manner from the fibre, also is exported in considerable quantity, under the name *Brazilian arrow-root*; and from it Tapioca is made, by heating it on hot plates, and stirring with an iron rod; the starch-grains burst, some of the starch is converted into dextrine, and the whole agglomerates into small irregular masses.—Another species or variety

MANIPLE—MANISTEE.

of *M.* also is cultivated, the roots of which contain a perfectly bland juice, and are eaten raw, roasted, or boiled. This, the SWEET CASSAVA or SWEET JUCA (*M. Aipi* of some botanists, said to be a native of Africa as well as of America), is described as having the leaves 5-parted, and the root of longer shape than the common or bitter cassava, and much smaller; only about six ounces in weight (other accounts make it as large).—The *M.* is easily propagated by cuttings of the stem, and is of rapid growth, attaining maturity in six months. The produce is at least six times that of wheat.

MANIPLE, *n.* *măn'ĩ-pl* [*L. manip'ulus*, a handful, a company of soldiers—from *mănus*, the hand; *plēō*, I fill: *It. manipolo*: *F. manipule*]: in *anc. Rome*, a small band of soldiers; an ornament like a scarf worn about the left arm of a priest at mass. MANIPULAR, *a.* *mă-nĩp'ũ'lěr*, pertaining to the maniple, or to the hand.

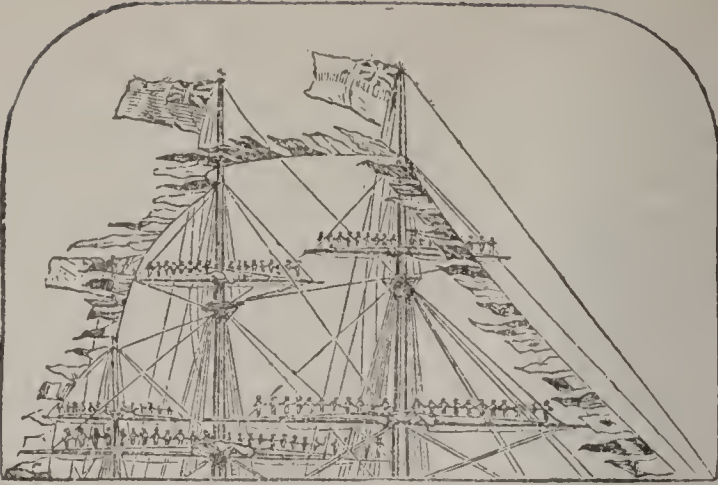
MANIPULATE, *v.* *mă-nĩp'ũ'lăt* [*mid. L. manipŭlătus*, led by the hand—from *L. mănus*, the hand; *plēō*, I fill]: to treat, operate, or work by means of the hand; to manage for some desired end, generally in an ill sense. MANIP'ULATING, *imp.* MANIP'ULATED, *pp.* MANIP'ULATION, *n.* *-lă'shŭn*, work by hand; manual operation or treatment, particularly in an artistic or skilful manner. MANIP'ULATIVE, *a.* *-lă-tiv*, pertaining to or done by the hand. MANIP'ULATOR, *n.* *-lă-těr*, one who manipulates. MANIP'ULA'TORY, *a.* *-lă'těr-ĩ*, of or pertaining to manipulation.

MANIPUR': see CASSAY.

MANIS, *mă'nĩs*: genus of mammalia, of ord. *Edentata*, containing several species, natives of Africa and the warm parts of Asia, and in their habits and many of their characters closely resembling the Ant-eaters (q.v.) of S. America; but having, among other differences, the body and the tail covered with an armor of large sharp-edged and pointed scales. The species are numerous. One, remarkable for the length of its tail, the *Phattagen* of the ancients (*M. tetradactyla*), inhabits western Africa. It is about five ft. in length, of which the tail occupies three ft.—Another, the SHORT-TAILED *M.* (*M. pentadactyla*), is common in many parts of the E. Indies: see PANGOLIN.

MANISA, *mă-ně'să*, or MANISSA, *mă-nĩs'să* (ancient *Magnesia ad Sipylum*): town of Asia Minor, on the s. bank of the Sarabat (*Hermus*), 28 m. n.e. of Smyrna. It abounds in handsome public buildings. Silk and cotton manufactures are carried on. The anc. Lydian Magnesia is famous for the victory of the Romans under Scipio over Antiochus III. of Syria. Pop. stated variously 35,000 to 60,000.—For another Magnesia in anc. times, not far from this one, see MAGNESIA *ad Mœandrum*.

MANISTEE, *măn-ĩs-tě'*: city, cap. of Manistee co., Mich.; on Manistee river and Lakes Michigan and Manistee, and a branch of the Flint and Pèrre Marquette railroad; 25 m. n. by e. of Luddington, 72 m. n. of Muskegon, 135 m. n.w. of Lansing. It is in the famous fruit



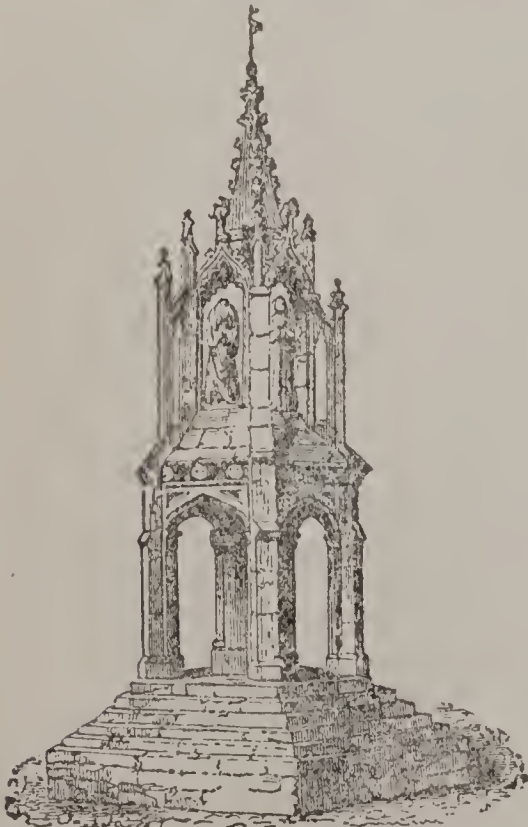
Manning the Yards.



Manx Cat.



Sugar Maple (*Acer saccharinum*).



Market-cross, Leighton-Buzzard.



Marmose (*Didelphys murina*).



Marline-spikes.

MANITOBA.

and peach belt of Mich.; is built on both sides the river; has 20 steam saw, shingle, and planing mills on Lake Manistee, and foundries, machine-shops, and tanneries; contains court-house, 6 churches, 1 national bank (cap. \$100,000), high school, public hall, and several newspapers; and ships annually 200,000,000 ft. of lumber and a vast quantity of shingles, lath, pickets, and bark. Pop. (1880) 6,930; (1890) 12,812; (1900) 14,260.

MANITOBA, *măn-ĩ-tō'ba* or *măn-ĩ-tō-bâ'*, or RED RIVER SETTLEMENT, or SELKIRK SETTLEMENT: province of the Dominion of Canada. The Red River settlement, of which M. is now the chief part, was a colony established in a tract north of Minnesota, along the Red River of the North. In 1811 the Earl of Selkirk, member of the Hudson's Bay Company, attracted by the fertility of the soil of this tract, obtained from the company a grant of a large area of country on both banks of the river, extending some distance within the present frontier of the United States. Next year he brought out a number of settlers from the Highlands of Scotland. The right of the Hudson's Bay Company to grant this land was, however, disputed by the Northwest Company; and when the settlers commenced to build, they were driven off by the servants of the Northwest Company. Hostilities continued between the servants of the two companies for several years, and in 1816 there was a pitched battle between them. The Earl of Selkirk arriving soon afterward, found his settlers scattered; but by energetic measures, and by help of 100 disbanded soldiers from Europe whom he had brought with him, he secured for his old and new protégés a peaceful settlement. They established themselves near Fort Garry; and in 1817 the earl obtained from the Indians a transfer of their right to the land two miles back from the Red river on both sides. Still the settlers had some difficulties to overcome, especially from visitations of grasshoppers. These were gradually surmounted; but the population, now including many half-breeds, remained very isolated.

In 1869 the Hudson's Bay Company surrendered all their claims to the N. W. Territory to the British govt., which in the following year transferred that territory to Canada. The Canadian govt. now organized that portion of the Red river district between long. 96°—99° w. and lat 49°—50° 30' n. as the PROVINCE OF MANITOBA. In 1881, the area of M. was enormously increased, being enlarged from 14,000 sq. m. to about 150,000; and the province now extends 89° 20'—101° 50' w., and 49°—52° 30' n. The cap. is Winnipeg (q.v.), with pop. (1881) 7,985; (1886) 20,238; (1891) 25,639; (1901) 42,340.

The Red River Valley is a level plain or prairie, with a very fertile soil. It consists of rich black mold 2 to 4 ft. thick. In places the ground has been cropped for 50 years without apparent diminution of fertility. The surface was generally treeless, though a few miles eastward the country was wooded. The soil produces 20–25 bushels of wheat to the acre; and the grain ripens in about 110 days. M. has rich pasture-land. The chief products (1895) were

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wheat 1,140,276 acres yielding 31,755,038 bu.; oats 482,658 acres, 22,555,733 bu.; barley 153,839 acres, 5,645,056 bu. Nearly 100,000 acres of new land were broken during the year and the cultivated area was 1,887,796 acres. The average under wheat (1896) was 999,598, and the crop was estimated at 18,500,000 bu. and about 39,500,000 bu. of all grain. The construction of the Canadian Pacific r.r. through this province has aided largely in the rapidity of its development. M., since 1897, is one of the great grain-producing districts of the world. The winter climate is less severe than in more southern portions of the Red River Valley. There has recently been a steady influx of immigrants from the eastern provinces, Britain, the United States, Iceland, and elsewhere. Missionaries to the Indians early established Rom. Cath. churches, and that denomination comprises a large portion of the people. Equal numbers of Rom. Catholics and Protestants compose the board of education. There has been a large immigration of Scotch, mostly Presbyterians. The province is intersected by the Canadian Pacific railway, and has direct railway connection southward with the United States. For the proposed direct sea route by Hudson's Bay, see HUDSON'S BAY. The government consists of a lieut.govt., appointed by the Dominion govt., an executive council of five, and a legislative assembly of 24; there is also a legislative council of seven appointed for life. Both the English and the French languages are used in public proceedings. The University of Manitoba, at Winnipeg, comprises the college of St. Boniface, founded 1872 (Rom. Cath.), St. John, 1872 (Episc.), and Manitoba (Presb.). Provision has been made for common schools throughout the province.

In 1869, the French-speaking population, led by Louis Riel, organized a force, imprisoned their English and Scotch opponents, seized Fort Garry, established a provisional government, robbed the treasury, and dictated terms to the gov. of the Hudson's Bay Company, to which he had to submit. A military force under Wolseley arrived 1870, and Riel, fearing capture, escaped, which put an end to the insurrection. Sentence of death was executed on Riel for heading a rebellion of half-breeds and Indians in the N. W. Territories 1885. In recent years non-sectarianism in the M. schools has occupied the public mind, and an agitation in favor of separate schools for Rom. Catholics and Protestants was begun. Though the speech from the throne, in the legislature (1896, Feb. 6), declared that the results of the election showed that the people were opposed to separate schools, on the 11th a bill for the restoration of the separate school system was introduced in the Canadian house of commons. On Feb. 27th the M. legislature protested against Dominion interference in M. school affairs, and on April 15 the Canadian govt. withdrew the measure after its second reading. Pop. (1891) 152,506; (1901) 254,947. See Prof. Bryce's *Manitoba* (1882); two works by Fraser Rae; *A Year in Manitoba* (W. & R. Chambers, 1882);

MANITOBA LAKE—MANKATO.

MANITOBA LAKE: one of the three principal lakes in the province of Manitoba, Canada; about 130 m. long and 10 m. wide; fresh and shallow; connected with Lake Winnipeg by Dauphin river; navigable for vessels drawing 10 ft. of water at high water, in spring time, it discharges its surplus water into Lake Winnipeg, and at such times the Dauphin river expands about midway between the two lakes, and forms a third, St. Martin's. M. receives the waters of several small lakes at the n. end, and of White Mud river at the s., the drainage of the province being wholly n.e. to Hudson's Bay.

MANITOU, n. *măn'î-tô*: name given by the American Indians to any supernatural object as calling forth their fear or their worship; with something of the meaning of the Gr. *dæmon*, good or evil spirit; also of the African *fetich*, charm, amulet, or magical rite. The Indian idea of the 'Great Spirit' is as of the most powerful M.—not as of the one personal living God.

MANITOULIN ISLANDS, *măn-ê-tô'lin* or *măn-ê-tô-lên'*: group in Lake Huron; comprising Grand Manitoulin or Sacred Isle, and Little Manitoulin or Cockburn Isle, belonging to Britain; and Drummond Isle, belonging to the state of Mich. They are separated from the n. shore of Lake Huron by a channel 7 to 18 m. in breadth. Grand Manitoulin is 90 m. long, by 5 to 30 broad; Little Manitoulin, circular in shape, has a diameter of 7 m.; Drummond Isle is 24 m. long, by 2 to 12 broad. All are irregular and striking in their natural features, and the Grand and Little Manitoulin are covered with large and dense forests of pine. Pop. more than 2,000, mostly Indians.

MANITOWOC, *măn-î-tô-wôlk'*: city, cap. of Manitowoc co., Wis.; on the Manitowoc river and Lake Michigan, and the Milwaukee Lake Shore and Western railroad; 48 m. e.n.e. of Fond du Lac, 75 m. n. of Milwaukee, 105 m. n.e. of Madison. It is in a fertile, heavily timbered region; is nearly surrounded by a chain of hills 70 ft. high; has a large lake trade; and contains court house, 11 churches, high school graded schools, 1 national bank (cap. \$100,000), 1 savings bank, 1 state bank (cap. \$50,000), 5 tanneries, several steam saw, shingle and planing mills, and a number of shipyards. Pop. (1880) 6,367; (1885) 6,881; (1890) 7,710; (1900) 11,786.

MANITRUNK, n. *măn'î-trũngk* [*L. mănus*, the hand; *truncus*, a trunk or stem]: a term applied to the anterior segment of the trunk or thorax in insects.

MANKATO, *măn-kâ'tô*: city, cap. of Blue Earth co., Minn.; on the Minnesota river at the mouth of the Blue Earth, and on the Chicago Milwaukee and St. Paul, Chicago St. Paul Minneapolis and Omaha, and the Chicago and Northwestern railroads; 86 m. s.w. of St. Paul. It is in a rich agricultural district, and contains 11 churches, state normal school, Rom. Cath. college, high school, graded schools, 3 public halls, 2 nat. banks (cap. \$200,000), fine driving park, and manufactories of linseed oil,

MANKIND—MANNA.

beer and ale, flour, furniture, foundry and machine-shop products. Pop. (1880) 5,550, (1890) 8,838, (1900) 11,599.

MANKIND, MANLY, MANLINESS: see under **MAN**.

MANLEY, *mă'n'li*, **JOHN**: 1733–1793, Feb. 12; b. Torquay, England: naval officer. He was bred to the sea; settled in Marblehead, Mass., early in life; became master in the mercantile marine; was appointed capt. by Washington and ordered to intercept supplies for Gen. Gage's army in Boston, 1775, Oct.; sailed in the schooner *Lee* and captured 3 British vessels in Boston harbor Nov. 29 and Dec. 8; was on cruising duty through the winter, 1775–6; commissioned by congress capt. in the navy Apr. 17, and assigned to command the frigate *Hancock*, 32 guns, then building in Boston, Aug. 22; captured the British man-of-war *Fox*, and was himself captured by the British frigate *Rainbow*, 1777, July; commanded the privateer *Pomona* after being exchanged, till again captured and confined at Barbadoes; made his escape and commanded the privateer *Jason*; captured two British privateers 1779, July; was given command of the frigate *Hague*, 1782, Sep.; and after being driven on a sand-bank at Guadaloupe by a British 74-gun frigate, defended himself against 4 ships of the line 3 days, and made his escape. He conducted the first and last naval operations in the revolutionary war.

MANN, *mă'n*, **HORACE**, LL.D.: American statesman and educationist: 1796, May 4—1859, Aug. 2; b. Franklin, Mass. He graduated at Brown Univ., Providence, and studied law; and was elected to the legislature of Mass. 1827, where his first speech was in favor of religious liberty, and his second a plea for railways. He was an advocate of temperance reform and a founder of the State Lunatic Asylum. Removing to Boston, he was elected, 1836, to the state senate, of which he became pres. After editing the revised statutes of the state, he was for 12 years sec. of the board of education. He gave up business and politics, and devoted his whole time to the cause of education, introduced normal schools and paid committees, and, 1843, made a visit to educational establishments in Europe. His Report was reprinted in England and America. For 12 years he worked 15 hours a day, held teachers' conventions, gave lectures, and conducted a large correspondence. In 1848, he was elected to congress, as the successor of ex-Pres. John Quincy Adams, whose example he followed in energetic opposition to the extension of slavery. At the end of his term, he accepted the presidency of Antioch College, at Yellow Springs, Ohio, established for the education of both sexes, where he labored with zeal and success until his death, 1859, Aug. 2. His principal works are his educational reports, and *Slavery, Letters and Speeches*.

MANNA, n. *mă'n'nă* [Heb. *man hu*, what is this? L. and Gr. *manna*—for a different derivation, less satisfactory to most scholars, see the *Pentateuch*, by the Very Rev. Dr. Wm. Smith, 355,6]: food miraculously supplied to the Israelites in the wilderness of Arabia. In modern

times the name is given to a species of sugar which exudes as a sweet juice from incisions made in the stems of the Manna Ash (see ASH), native of the mountainous parts of s. Europe. Sicily is the chief locality of the M., and there, in July or Aug., the collectors make a deep cut through the bark to the wood near the base of the tree with a curved-bladed knife, repeating such incisions daily in different places, always, however, on one side only, and gradually rising until the branches are reached, and then cutting some of the largest of those. The following year, the other side of the tree is operated upon, and this alternation gives the bark time to heal. If the weather is warm and favorable, the M. begins to ooze out of the cuts slowly, and to harden in lumps or flakes, which are from time to time removed by the collectors. M. is a light porous substance, of yellowish color, not unlike hardened honey, but harder and drier. There are various qualities known in commerce, according to the time of collection, the goodness of the season, and other causes. It is used chiefly in medicine, having a gentle purgative effect, which renders it valuable for administration to very young children. It consists principally of a crystallizable sugar called *Mannite* (q.v.) and an uncrystallizable sugar, which possesses the sweet and purgative properties. There are several species of ash that produce M.; also there are several other manna-yielding plants besides the ash, especially the manna-bearing Eucalyptus of Australia (*Eucalyptus manifera*), which is non-purgative, and is a favorite sweetmeat with the children of that country. Small quantities are found on the common larch (*Larix Europæus*), in some districts; this kind is known as M. of Briançon. M. is obtained in minute quantities also from various mushrooms, and from the fronds of some sea-weeds.

The M. of the Israelites appears (Ex. xvi. 14-36; Num. xi. 7-9; Dent. viii. 3-16; Josh. v. 12; Ps. lxxviii. 24, 25) as their food, supplied in a special way from God, in vast quantities, for their chief sustenance during the 40 years' wandering in the wilderness. It has been conjectured (see Ehrenberg, *Symbolæ Physicæ*, Fasc. i. 1823) to have been the saccharine substance called *Mount Sinai Manna*, which is produced in that region by a shrub, *Tamarix manifera*, a species of TAMARISK (q.v.), from the branches of which it falls to the ground. It does not, however, contain any mannite, but consists wholly of mucilaginous sugar. The exudation which concretes into this manna is caused by the punctures made in the bark by insects of the genus *Coccus* (*C. maniparus*), which sometimes cover the branches. It is a kind of reddish syrup, and is eaten by the Arabs and by the monks of Mount Sinai like honey with their bread. It was formerly supposed by many that the M. of the Jews was produced by a species of Camel's Thorn (q.v.). But, as is pointed out by Prof. C. E. Stowe, no natural product of Arabia now known as M. has the qualities or uses of the M. of Scripture. They all are condiments or medicines rather than foods; they are produced only between May and Aug., and not

MANNA CROUP—MANNED.

through the year; they come only in small quantities, and not by the thousands of tons weekly as was requisite for the nation in the desert; they can be kept for long periods without spoiling, unlike the *daily M.* of Israel; they are not largely increased in amount for the time of one generation and then suddenly ceasing, as in Josh. v. 12. Any M. which sustained the Israelites must have been a special provision by Divine power (see Smith's *Bible Dict.*).

MAN'NA CROUP, or **MAN'NA GROATS**: kind of semolina, prepared in Russia, usually from the hard wheats of Odessa and Taganrog. In the process of grinding for flour, small rounded fragments of these hard grains are obtained from the grooves of the grinding-stones, and these constitute the ordinary manna groats, esteemed material for puddings. It is undistinguishable from the semolina of Italy. Another kind is made by husking the small grain of the aquatic grass, *Glyceria fluitans*, which is carefully collected for the purpose; it is an expensive luxury. Small quantities of the commoner kind are occasionally exported for use in other countries, but it is not well known.

MAN'NA GRASS (*Glyceria fluitans*, or *Poa fluitans*): grass plentiful in marshes, ditches, and by the sides of stagnant pools in Britain, and most parts of Europe; found also in N. America, Asia, and New Holland. It is known also as *Flote fescue*, *Floating Sweet Meadow Grass*, etc. (see **FESCUE**). It varies in height from one to three ft., and has a long, slender, nearly erect panicle, the branches of which are at first erect and appressed to the rachis; the spikelets awnless, slender, cylindrical, an inch long or nearly so, with 7-20 florets; the glumes small, unequal, and obtuse; the outer paleæ with seven prominent ribs and a membranous margin; a scale of one thick fleshy piece. The stems are decumbent at the base, and rooting at the joints; the leaves long and rather broad, the lower ones often floating. M. G. is perennial, and useful in irrigated meadows and in very wet grounds, affording large quantities of food for cattle. In many parts of Germany and Poland, the seeds—which fall very readily out of the spikelets, are collected by spreading a cloth under the panicles and shaking them with a stick; they are used in soups and gruels, are very palatable and nutritious, and are known in shops as *Polish Manna*, *Manna Seeds*, and *Manna Croup* (q.v.). They are a favorite food of geese, and eagerly devoured by carp and other fish.—Akin is the Reed Meadow Grass, Water Meadow Grass, or Reedy Sweet Water Grass (*Glyceria* or *Poa aquatica*), a still larger grass, with very abundant herbage, one of the most productive, indeed, of fodder grasses, growing in ponds, ditches, marshes, and the sides of rivers, often where they are tidal. Hay made of it is greatly preferred to that of other bog grasses. Its rapid growth often chokes up water-channels, so that they must be cleared of it.

MANNED: see under **MAN**.

MANNER—MANNHEIM.

MANNER, n. *măn'ner* [It. *maniero*, well-trained—from L. *manuāriūs*, manageable, pertaining to the hand: It. *maniera*; F. *manière*, the handling of a thing, manner; OF. *manier*, habitual, accustomed—from L. *mānum*, the hand]: form; method; habit; sort or kind; way of performing or doing; peculiar carriage or deportment. **MAN'NERS**, n. plu. *-nerz*, course of life; morals; deportment or bearing toward others; behavior. **MAN'NERED**, a. *-nerd*, having manners; exhibiting the peculiar style of an artist or author, particularly in its objectionable form. **MAN'NERISM**, n. *-ner-izm*, a tasteless peculiarity; a peculiar mode of treatment carried to excess; a characteristic bearing or treatment. **MAN'NERIST**, n. *-ist*, one who executes his works in one unvaried and peculiar style, as an artist. **MAN'NERLY**, a. *-li*, well-behaved; civil; respectful: AD. with civility; respectfully. **MAN'NERLINESS**, n. *-li-nēs*, quality of being mannerly. **IN A MANNER**, in a certain degree. *Note.*—As applied to art, **MANNER** has two quite different significations; in the one, it signifies a peculiarity of habit, and implies a kind of reproach against an artist—in the other, it is the artist's peculiar way of choosing, imagining, and representing his subjects, including what are called his style and handling.—**SYN.** of 'manner': way; mode; custom; fashion; degree; kind; mien; character; morals; habits; behavior; bearing; deportment; air; look; aspect; appearance.

MANNERS, *măn'ērz*, **THE FAMILY OF**: noble English family, of Northumbrian extraction, their ancestor, Sir Robert de M., having been lord of the manor of Ethale or Etal, in that county in the 13th c. His descendant, also Sir Robert de M., in the time of Edward III., was gov. of the important border fortress of Norham Castle. In the reign of Henry VI., another Sir Robert de M. acted as sheriff of Northumberland; his grandson was raised to the earldom of Rutland by Henry VIII.; and the tenth earl was raised to the dukedom 1602. The eldest son of the third duke was the celebrated Marquis of Granby (q.v.)

MANNHEIM, *măn'hīm*: formerly cap. of the Rhenish palatinate, now the most important trading town in Baden, and, after Cologne and Coblenz, the most important on the Rhine; in a fertile plain, on the right bank of the Rhine, on a triangular piece of ground inclosed between the Rhine and the Neckar at their junction, about 18 m. below the city of Spire. The site of the town is low, and a high dike protects it from inundations. A bridge of boats crosses the Rhine, here 1,200 ft. in breadth, and a chain-bridge the Neckar. The town is remarkable for cleanliness and regularity, the whole being laid out in quadrangular blocks. Its fortifications were destroyed after the peace of Lunéville, and gardens now occupy their place. The palace, built 1720–29 by the Elector Palatine Karl Philipp, is one of the largest buildings of the kind in Germany. The city contains a lyceum with a library, a botanic garden, an observatory, etc. Machinery, iron, brass, india-rubber, sugar, mirrors,

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chemicals, cigars, shawls, linen, and playing-cards are chief manufactures; and there are tanneries and bleach-works. A thriving trade is carried on chiefly by boats on the Neckar and Rhine. About 3,000 river-craft, carrying nearly 700,000 tons of goods annually enter the new harbor, whose cost was more than \$3,000,000. M. is connected by railway with the chief towns of Germany. M. was a mere village till the beginning of the 17th c., when a castle was built by the Elector Palatine Frederick IV., around which a town grew up, peopled chiefly by exiles for religion from the Netherlands. It was several times taken and retaken during the wars of the 17th c., totally destroyed by the French in the end of that c., rebuilt, and strongly fortified. Of the inhabitants, the Jews number about 4,500; the rest are Rom. Cath. and Prot. in about equal proportions. Pop. (1900) 141,131.

MANNING, *măn'ing*, HENRY EDWARD, D.D.: Cardinal of the Rom. Cath. Church; b. Totteridge, in Hertfordshire, Eng., 1808, July 15; d. 1892, Jan. 14; educated at Harrow and at Balliol College. While at Oxford he was ordained in the Church of England, and was remarkable as an eloquent preacher, and as a leader of the Tractarian party. In 1834 he obtained a country rectory (Lavington and Grafton, Sussex co.) and 1840 became archdeacon of Chichester. In 1851 the legal decision in the Graham case subjecting the church to the authority of the crown on a question of doctrine, occasioned his leaving the Church of England, and joining the Church of Rome, in which he was made priest 1857. For a time superior of a monastic house, he was, 1865, appointed Rom. Cath. Archbishop of Westminster. At the Œcumenical Council, 1870, M. was one of the most zealous supporters and promoters of the infallibility dogma; and, named cardinal 1875, he has continued one of the great leaders of the Ultramontane section of the church. Besides being the leading spirit in most Rom. Cath. movements in England, he has taken part in many non-sectarian good works, has been energetic for public education, and has done much to improve the condition of the poor Irish in London. He has keen intellect, great spiritual fervor, and devotedness to good works. He was especially influential in adjusting the differences between the London dockmen and the directors of the dock companies which had led to a great strike 1889. Before his secession to Rome, M. published several volumes of powerful sermons; since then, his publications have been mainly polemical. Among his numerous volumes, pamphlets, and articles, are discussions of the temporal power of the pope, infallibility, the Vatican Council, and Ultramontanism.

MANNING, *măn'ing*, JAMES, D.D.: 1738, Oct. 22—1791, July 29; b. Elizabethtown, N. J.; educator. He graduated at the College of N. J., 1762: was ordained pastor of a Bapt. church in Morristown, N. J., 1763, Apr. 19; removed to Warren, R. I., and opened a Latin school 1764; organized a Bapt. church there, and was its pastor

MANNING THE NAVY.

1764-70; led the movement that resulted in the foundation of Rhode Island College (changed to Brown Univ., in honor of Nicholas Brown 1804) 1764; was its pres. 1765-90, at Warren till 1770, afterward at Providence till his resignation; and was pastor of the First Bapt. Church at Providence from 1770 till his death. The exigencies of the revolutionary war compelled the closing of the college and the occupation of its buildings for barrack and hospital purposes 1776, Dec. 17-1782, May 27; and during this period M. filled his pulpit regularly and was active in patriotic work. He was chairman of the Providence school committee, an influential federalist, member of congress 1786, and a powerful advocate of the ratification of the federal constitution by R. I. He received his degree from the Univ. of Penn. 1785.

MANNING, MANNED, MANNISH: see under MAN.

MANNING THE NAVY: furnishing war-ships with the crews needful for all purposes. Until a recent date, British sailors engaged themselves for only the term in which a certain vessel should be in commission, which there was a tacit understanding would be about five years. In the Napoleonic and former wars, when seamen were urgently needed, and knew their value, the pressgang was resorted to, and vacancies were filled by compulsion: see IMPRESSMENT. At present, seamen for the British navy are encouraged by contingent advantages to enlist for a specified number of years, at the end of which they become entitled to permanent pension. On the paying off of their ship, these men are granted liberal leave, after which they join a *dépôt*, and are thence drafted to some other vessel in which their services are required. As a reserve for times of emergency, there is the Royal NAVAL RESERVE (q.v.), more than 20,000 strong, a very important auxiliary. The Naval Artillery Volunteers (see VOLUNTEERS) in some respects take the place of the Coast Volunteers, a force not now maintained.

The Dutch, Danish, and Swedish navies are manned mainly by volunteers. The navies of France, Russia, and Italy are manned by conscripts levied in the maritime provinces of the respective countries. The German ships of war depend on the law of compulsory service for their complement.

The U. S. navy is manned by volunteers enlisted for definite periods. In order to insure a sufficient supply of men, and to have them well trained and experienced in seamanship, congress, 1875, authorized the annual enlistment of 750 boys, between 16 and 18 years old, to serve until 21 years of age. The naval department maintains a number of school-ships, on which these lads receive a thorough nautical education and rigorous training in practical seamanship. As the navy has been reduced to the low standard of 7,500 men, the system of boy enlistment, and graduation from the training-ships into the regular service, is rapidly manning our entire navy with well educated and trained sailors of superior

MANNING THE YARDS—MANŒUVRE.

efficiency, while in time of war it will supply the nucleus of a much larger force of experienced seamen if so desired. So satisfactory has this system of manning the navy been found, that the British govt. has adopted some of the essential features of it, with much benefit. See ENLISTMENT.

MANNING THE YARDS: for practical purposes, sending a sufficient number of men aloft and on to the yards to furl or unfurl the sails; for purposes of compliment, arranging along the yards a row of sailors, with their hands touching—the men standing on the yard itself, and holding to a rope which runs across about breast-high between the lifts. When the men are all in clean white uniforms, this has a singularly lively and picturesque effect. It is done when any great personage passes by the ship or comes on board, or in commemoration of some great event; but, as the operation is attended with considerable and unnecessary danger, it is, under present regulations, far more rare than formerly.

MANNITE, *mǎn'it*, or MUSHROOM SUGAR ($C_6H_{14}O_6$): peculiar saccharine matter which forms the principal constituent of Manna (q.v.); found also in several kinds of fungi, in asparagus, celery, onions, etc. It is most readily obtained by digesting manna in hot alcohol. On cooling the filtered solution, the M. is deposited in crystals, which are very soluble in water, and have a sweet taste. It is not susceptible of alcoholic fermentation, and may be readily distinguished from cane and grape sugar by simple tests. Heated with hydrate of potash, it gives a mixture of acetate, formate, and valerianate of potash, hydrogen being evolved.

MANNUS, *mǎn'ūs* [fr. Aryan root *man*, to think]: according to Tacitus, the name given by the Germans to the son of the earth-born god *Tuisco*. From his three sons, they derived their three great tribes, *Ingavones*, *Is-karones*, and *Herminones*. M. belongs, not to the Teutonic people alone, but to the great mythus of the origin of the human race, common to the whole Aryan family, and, like the Hindu *Manu* or *Manus*, stands forth as the progenitor of the inhabitants of earth endowed with reason. Compare Wackernagel in Haupt's *Zeitschrift für Deutsches Alterthum* (Bd. 6).

MANOËL, *mā-nō-ěł'*, DON FRANCESCO: most eminent of modern Portuguese lyric poets: 1734–1819, Feb. 25; b. Lisbon. The hostility of the Inquisition compelled M. to abandon his native country, and he took up his residence at Paris, where he died. There are more editions than one of his *Obras completas*. His Odes are highly esteemed.

MANŒUVRE, or MANEUVER, n. *mǎ-nô'vèr* [F. *manœuvre*, a manœuvre—from mid. L. *manuōpĕra*, a working with the hand—from F. *main*; L. *mānus*, the hand, and F. *œuvre*; L. *opĕră*, work], management with address or artful design, adroit proceeding; stratagem; dexterous movement or operation, as with troops or ships—gener-

MAN OF SIN—MANOR.

ally some collateral movement, not openly apparent, of bodies of men or squadrons of ships, by which an enemy is coerced, or by which it is sought to compel him to take some course adverse to his interests: V. to move dexterously troops or ships for attacking or defending with advantage, or as an exercise in tactics; to change the position of troops or ships; to manage with address or art. MANŒUVRING, imp. *mă-nô'vêr-îng*. MANŒUVRED, pp. *mă-nô'vêrd*. MANŒUVRER, n. *mă-nô'vêr-êr*, one who manœuvres.

MAN OF SIN, THE: the Anti-Christ, referred to by the apostle Paul, II. Thess. ii. 3, further characterized as the Son of Perdition; and (in verse 8) as the Lawless One; the extreme personal historical contrast to Jesus Christ. His appearance is to be the climax of the last great apostasy in human history, and his fate is to be destruction by the irresistible might of the re-appearing Christ. The attempt among some of the Prot. reformers to identify the M. of S. with the papal power—retained in some creeds even to this day, e.g., the Westminster Confession, though now scarcely believed in—was unwarrantable, and needs for its excuse a remembrance of the fierce conflict of the Reformation time.

MAN-OF-WAR: term of unknown origin, for an armed vessel carrying cannon, and belonging to some constituted and acknowledged government. To such a vessel pertain the privileges of war; her deck is, by a legal fiction, taken to be a portion of the soil of the nation whose flag she carries; in time of war, she is justified in attacking, sinking, burning, or destroying the ships and goods of the foe, and by the law of nations, she may stop and search the merchant-vessels of neutral powers which she suspects of carrying aid to her enemy: see CONTRABAND. In case of being overpowered, the crew of a man-of-war are entitled to the ordinary mercy granted to vanquished combatants, lawfully fighting. Any vessel making war, but not belonging to an acknowledged government, is either a Privateer (see LETTER OF MARQUE) or a Pirate (see PIRACY).

MAN-OF-WAR BIRD: see FRIGATE BIRD.

MANOMETER, n. *măn-ôm'ê-têr* [Gr. *manos*, rare, thin; *metron*, a measure]: properly an instrument for measuring the rarity of the air or of other gases; but the name is most frequently applied to instruments for indicating the elastic force of gases, which is always inversely proportional to their rarity. The several kinds of Barometers (q.v.) are really manometers; so is the steam-gauge of a Steam-engine (q.v.) MANOMETRIC, a. *măn'ô-mêl'rîk*, or MAN'OMET'RICAL, a. *-mêl'rî-kâl*, pertaining to. MANOMETER is also called a MANOSCOPE, which see.

MANOR, n. *măn'êr* [OF. *manoir*, mansion-house of the lord of a feudal estate, the estate itself: mid. L. *mansus*, a residence—from L. *manêrê*, to remain: comp. Gael. *mainmir*, a fold for cattle]: in English law, a freehold estate held by the lord of the manor who is entitled by

Immemorial custom to maintain a tenure between himself and the copyhold tenants, whereby a kind of feudal relation is maintained between them; hence, anciently the district over which a lord had feudal authority. As, however, subinfeudation in England was prohibited by the statute of *Quia Emptores*, in the reign of Edward I., and no M. could be created since that date, it follows that all existing manors must trace their origin from before that time. Copyhold estates are thus a relic of ancient feudalism, and form an exception to the general rule in England, where freeholds form the highest kind of estate known to the law: see COPYHOLD. Manors closely resemble the feudal estate held in Scotland by all proprietors of land, who have to this day unlimited powers of subinfeudation, which they constantly act upon, and thus keep up a chain of vassals: see FEU. MANORIAL, a. *mǎ-nō'řǎ-ăl*, belonging to a manor. MANORHOUSE, the house of the lord of the manor. LORD OF THE MANOR, the proprietor or feudal superior, titled or otherwise, of the manor or estate.

MANOSCOPE, n. *mǎn'ō-skōp* [Gr. *manos*, rare or thin; *skopēō*, I view]: a manometer.

MANRED, n. *mǎn'řěd*, or MAN'RENT, n. *-řěnt* [AS. *man*, man; *ræden*, law, condition, state]: in OE. and Scot., the state or condition of a person; the homage due to a superior; the power of a superior; vassalage. BONDS OF MANRED, or of MANRENT, anciently, agreements in the Highlands of Scotland between the greater and lesser magnates, where protection from one party was stipulated in return for allegiance on the other. Such bonds were common till two or three centuries ago, the royal authority being comparatively powerless to repress internal warfare among the fastnesses of the north and west.

MANRESA, *mân-rǎ'sâ*: a town of Spain, in the province, and 30 m. n. w. of the city of Barcelona. It is situated in a fertile and well-irrigated district, on the left bank of the Cardonet. M. has manufactures of cotton and silk fabrics, broadcloths, etc. In 1811, it was set on fire by Marshal Macdonald, when more than 800 houses, with churches and manufactories, were burned down. Pop. 16,264.

MANS, LE, *lěh mǒng*: city of France, formerly cap. of the province of Maine, now of the dept. of Sarthe, on the right bank of the river Sarthe, 132 m. s. w. of Paris by railway. The chief edifice is the cathedral, containing the tomb of Berengaria of Sicily, queen of Richard Cœur de Lion. There is a public library of 50,000 vols. and several artistic and scientific institutions. The town manufactures wax-candles, woolens, lace, soap, and hosiery, and is famous for its poultry, of which it sends a large supply to the metropolis. It gives its name to a battle in the Franco-Prussian war of 1870-1, in which the French—the second army of the Loire—were defeated with the loss of 20,000 prisoners. This battle rendered impossible the relief of Paris. Le M. (anc. *Cenomani*) was, in the

MANSARD—MANSEL.

age of Charlemagne, one of the chief cities of the Frankish empire. Pop. (1891) 57,412; (1901) 63,272.

MANSARD (or **MANSART**), *mǎng-sâr'*, **JULES HARDOUIN**: architect: 1645–1708; b. Paris: son of Jules Hardouin, painter, and nephew of François M., architect, whose name he assumed. He studied architecture with his uncle, coöperated with him in planning and building several churches and numerous chateaux; and after establishing himself independently, built the chateau of Clagny for Mme. de Montespan; was appointed architect to Louis XIV.; and became gen. supt. of the royal buildings, arts, and manufactures. His most noted works are the palaces of Versailles and Grand Trianon, the places Vendôme, Louis XIV., and des Victoires, the dome and completion of the Hôtel des Invalides, the gallery of the Palais Royal, and the chateaux of Marly and Lunéville. He became an obsequious courtier, was given numerous dignities and honors, and was charged with profiting on the vanity and caprice of the king. See **MANSARD ROOF**.

MANSARD ROOF, n. *mǎn'sârd-rôf* [after the inventor, *François Mansard*, Fr. architect, 1598–1662]: roof constructed with a break in its slope, so that each side has two planes, the lower being steeper than the upper. The framework ought to be arranged so that its parts are in equilibrium. This kind of roof has the advantage over the common form of giving more interior space for living



Mansard Roof.

room, and was in favor some years ago in the United States; but is now much less used, as it does not enter readily into artistic combinations now in vogue. The M. R. of later years was really a disguised and decorative modification of the severely simple gambrel roof of a hundred years ago, which was Mansard's invention.

MANSE, n. *mǎns* [Norm. F. *manse*; mid. L. *mansus*, a residence—from L. *manēre*, to remain]: in Scotch law, dwelling-house of the parish clergyman of the Established Presb. Church: in popular use the term is often applied to the dwelling-house of any minister of a dissenting congregation, though no legal right exists in the latter case. In the Established Church, every minister of a rural parish is entitled to a M., which the heritors or landed proprietors are bound to build and uphold; and he is entitled, as pertaining to the M., to a stable, cowhouse, and garden. The M. must, by statute, be near the church. The usual sum allowed of late years to build a M., is £1,000. The ministers of rural parishes only are entitled to a M. **MANSION**, n. *mǎn'shūn* [OF. *mansion*—from L. *mansiónem*, a dwelling], formerly, any place of residence; a large house or residence.

MANSEL, *mǎn'sêl*, The Rev. **HENRY LONGUEVILLE**, B.D.; Waynflete prof. of moral and metaphysical philosophy in Oxford Univ.: 1820–1871, July 31; b. Cosgrove, Northamptonshire, in which parish his father

MANSFIELD.

was rector. He was educated at Merchant Taylors' School, and at St. John's College, Oxford; and graduated 1843. In 1855 he was appointed reader in moral and metaphysical philosophy, in Magdalen College; 1859, became Waynflete prof.; 1867, was appointed Regius prof. of eccles. history, and canon of Christ Church, Oxford. His published works are: Aldrich's *Logic*, with Notes (1849); *Prolegomena Logica* (1851); article *Metaphysics*, in 8th ed. *Encyc. Britannica* (1857), afterward published separately; *Bampton Lectures—The Limits of Religious Thought* (1858); *The Philosophy of the Conditioned* (1866), in reply to Mill's *Review of Hamilton's Philosophy*. He was co-editor with Prof. Veitch of Sir William Hamilton's *Lectures*. Dean M. was regarded as belonging to the school of Sir W. Hamilton, as that had been developed from certain principles in the system of Kant. He was well-versed in metaphysical philosophy, and wrote in a clear and elegant style. His *Bampton Lectures* occasioned much controversy, both theological and philosophical. For an examination of M.'s philosophical views, see **CONDITIONED, THE PHILOSOPHY OF THE**.

MANSFIELD, *mānzfeld*: city, cap. of Richland co., O.; at the intersection of the Atlantic and Great Western, the Pittsburg Fort Wayne and Chicago, the Lake Erie div. of the Baltimore and Ohio, and the Northwestern Ohio railroads; 65 m. n. by e. of Columbus. It is in a fertile and populous region, on a commanding elevation; has a wholesale mercantile trade of more than \$3,000,000, and a manufacturing trade of \$4,000,000 per annum; contains 15 churches, co. court house, opera house, public library, public hall, seminary, 2 national banks (cap. \$200,000), 2 savings banks, Holly waterworks, many beautiful residences, and several newspapers. There are manufactures of agricultural implements, woolen goods, paper, flour, furniture, carriages, and foundry and machine shop products. Pop. (1890) 13,473; (1900) 17,640.

MANSFIELD, *mānzfeld*: market-town of England, county of Nottingham, 14 m. n. of the town of Nottingham; surrounded by the remains of the ancient forest of Sherwood. It stands in the centre of a large manufacturing and mining district, and contains, among other institutions, a Royal Free Grammar School. Silk, cotton and doubling mills are in operation, and the corn and cattle markets are largely attended. Pop. (1871) 11,824; (1891) 13,653.

MANSFIELD, JARED, LL.D.: 1759–1820, Feb. 3; b. New Haven; mathematician. He graduated at Yale, 1777; became distinguished as a teacher of mathematics in New Haven and Philadelphia; was appointed capt. U. S. engineer corps 1802, May 3, and assigned to the U. S. Milit. Acad. as prof. of mathematics; promoted maj. 1805, June 11, and lieut.col. 1808, Feb. 25; and resigned his commission 1810, July 23. He was surveyor-gen. of O. and the N. W. Terr., 1803–12; and prof. of

MANSFIELD.

natural and experimental philosophy in the U. S. Milit. Acad. 1812-28. He is believed to have established the first astronomical observatory in the United States near Cincinnati, while surveyor-gen. He received his degree from Yale 1825, and published *Essays, Mathematical and Physical* (New Haven, 1802).

MANSFIELD, JOSEPH KING FENNO: 1803, Dec. 22—1862, Sep. 18; b. New Haven; soldier. He graduated at the U. S. Milit. Acad., where he was asst. prof. of natural philosophy in his last year, 1822; entered the engineer corps, and served on the board appointed to plan fortifications for the coast harbors and cities; promoted 1st lieut. 1832, and capt. 1838; was chief engineer to Gen. Taylor's army in the Mexican war, and received the brevets of maj. for the defense of Fort Brown, Tex., which he had built, lieut.col. for Monterey, and col. for Buena Vista; was on fortification duty 1847-53; and was inspector-gen. of the army 1853-61. In 1861, May, he was commissioned brig.gen., and placed in command of the national capital. He fortified the city on all sides, and was then sent south, commanding at Camp Hamilton, Va., and Newport News. He took part in the capture of Norfolk, 1862, May 10; was milit. gov. of Suffolk June-Sep.; promoted maj.gen. vols, July; given command of a div. in the Army of the Potomac Sep. 10; and was mortally wounded in the battle of Antietam Sep. 17, dying the following day.

MANSFIELD, MOUNT: highest peak of the Green Mountains; in Cambridge, Lamoille co., Vt.: 'chin' 4,359 ft. above sea-level, 'nose' 4,019, 'forehead' 3,859. It is a summer resort, accessible from the e. and the w.; last railway station on the w., Underhill; favorite route by way of Stowe, on the s.e., reached by stage from Morrisville (8 m.) on the St. Johnsbury and Lake Champlain railroad, or from Waterbury (10 m.) on the Central Vermont railroad. From the 'chin' is obtained one of the most comprehensive views in all New England, including, on a clear day, nearly the entire length of Lake Champlain and the Adirondacks in the remote horizon on the w.; the mountains around Montreal, and occasionally the spires and towers of the city, on the n.; the valley of the Connecticut and the White Mountains, and sometimes Mount Washington itself, on the e.; and the rival peak of Camel's Hump and the main chain of the Green Mountains on the south.

MANSFIELD, WILLIAM MURRAY, Earl of: lord-chief-justice of the king's bench: 1705, Mar. 24—1793, Mar. 20; b. Perth, Scotland; fourth son of Andrew, Viscount Stormont. He studied at Christ Church, Oxford, took the degree M.A. 1730, and was called to the bar 1731. He soon acquired extensive practice—mainly, it seems, by his facility and force as a speaker, for neither then nor at any subsequent period was he reckoned a very erudite lawyer; and he was often employed on appeal cases before the house of lords. In 1743, he was

MANSLAUGHTER—MANTEGNA.

Appointed solicitor-gen., entered the house of commons as member for Boroughbridge, and at once took a high position. In 1746, he acted, *ex officio*, as counsel against the rebel lords, Lovat, Balmerino, and Kilmarnock; was appointed king's attorney 1754; and at this time stood so high, that had not the keenness of his ambition been mitigated by a well-founded distrust of his fitness for the peculiar work of leading the house, he might have aspired to the highest political honors. He became chief-justice of the king's bench 1756, and entered the house of lords under the title Baron M. of Mansfield, in the county of Nottingham. As his opinions were not those of the popular side, he was exposed to much abuse. Junius, among others, bitterly attacked him; and during the Gordon riots, 1780, his house, with all his valuable books and manuscripts, was burned. He declined, with much dignity, indemnification by parliament. In 1776, Murray was made Earl of Mansfield. He worked hard as a judge till 1788, when age and ill-health forced him to resign. M.'s great reputation rests on his judicial services. He defined the principles governing commercial transactions, and is considered the founder of English commercial law, bringing the ancient laws into harmony with the requirements of modern society.

MANSLAUGHTER, n. *măn'slaw-ter* [*man*, and *slaughter*]: the destruction of the human species; in *law*, the unlawful killing of any person in sudden heat or excitement, but without malice: it is voluntary when the injury is intentional, involuntary when it is not: its distinction from murder is in its lack of malice. Killing through gross negligence is a frequent kind of manslaughter. In England M. is usually called Culpable Homicide. **MAN-SLAYER**, one that has killed another unintentionally and without malice; a homicide.

MANSOR, **MANSUR**: second caliph of the house of Abbas: see **ALMANSOR**.

MANSUETE, a. *măn'swět* [L. *mausuetus*—from *manus*, the hand; *suetus*, pp. of *suesco*, I accustom]: tame, gentle; not wild, not ferocious; gentle, kind, meek, courteous, mild.

MANT, v. *mănt* [Gael. *mannt*, to stutter in speaking]: in *Scot.*, to stammer or stutter in speech: N. a stammering in speech. **MANT'ING**, imp. **MANT'ED**, pp.

MANTCHU'RIA, or **MANTCHOO'RIA**: see **MANCHURIA**.

MANTEGNA, *măn-tăn'ya*, **ANDREA**: 1431-1506, Sep. 13; b. Padua, Italy: painter. He studied painting with Francesco Squarcione, who adopted him as a son; painted an altar-piece for the Church of St. Sophia at Padua when 17 years old, and afterward added the evangelists; executed in fresco the life of St. James and the legend of St. Christopher in the Church degli Eremitani, and St. Mark in the Church of St. Guistina, Padua; went to Mantua 1468, invited by Ludovico Gonzaga, for whom he painted 9 cartoons representing the triumph of Julius Cæsar after his conquest of Gaul, now in Hampton

MANTEL--MANTES.

Court, England; spent 1485-90 in Rome at the request of Pope Innocent VIII., and painted a series of remarkable frescoes in the Belvedere Chapel, subsequently destroyed; engraved more than 50 of his designs, of which 30 are known to collectors; and crowned his fame by the *Madonna della Vittoria*, commemorating the victory of Gonzaga over Charles VIII. of France, 1495, now in the Louvre, Paris.

MANTEL, n. *măn'tl* [OF. *mantel*, a cloak—from L. *mantellum*, a means of covering or hiding: *mantel* and *mantle*, though from the same root, and primarily having the same signification, are differently spelt in order to distinguish the one from the other]: horizontal shelf or slab, or other ornamental work over the fireplace and above the chimneypiece—called also MANTEL-SHELF. MANTELPIECE, formerly, the lintel over the opening of a fireplace supporting the masonry above: now denoting the stone or wooden jambs, lintel, and shelf; thus the same as mantel. MANTEL-MIRROR, a mirror placed above the mantelpiece and resting on it—as distinguished from a *pier-mirror*, one placed in the space between two windows, or other similar position in an apartment. *Note*.—The *mantelpiece* proper consists of highly ornamental raised-work above the chimney, giving dignity to the fireplace, sometimes ornamented with the family coat of arms in carved work. The *mantling-work* is now commonly represented by a horizontal slab of stone, or shelf of wood, all below which is termed the chimneypiece: see CHIMNEYPIECE.

MANTELL, *măn'tél*, GIDEON ALGERNON: 1790-1852, Nov. 10; b. Lewes, Sussex: British paleontologist and geologist. He studied medicine, and practiced in his native town; removed to Brighton, thence to London, where he died. M.'s principal works are—*Fossils of the South Downs* (1822); *Wonders of Geology* (1838), perhaps the most popular geological work ever written by an Englishman. He was a very voluminous writer, no less than 67 works and memoirs of his being mentioned in Agassiz and Strickland's *Bibliotheca Zoologiæ et Geologiæ*. His claims to a permanent place in the history of science rest chiefly on his laborious investigations into the fossils of the Wealden beds. To him is due the discovery and description of four out of five of the great Dinosaurian reptiles—viz., the *Iguanodon*, the *Hylæosaurus*, the *Pelorosaurus*, and the *Regnosaurus*.

MANTELLIA, n. *măn-těl'li-ă* [after Dr. Mantell]: in *geol.*, fossil, cycadaceous stems of a sub-cylindrical shape, covered with rhomboidal leaf-sears, found in the oolitic formation—termed crows' nests' by the quarrymen.

MANTES, *mõngt* (anc. *Medunta*): town of France, dept. of Seine-et-Oise, on the left bank of the Seine, 29 m. w.n.w. of Paris. M. was a town of the Celts, from which the Druids were expelled by Julius Cæsar. William the Conqueror took it by assault 1087, and here he received the injury which caused his death.—Pop. 7,032.

MANTEUFFEL—MANTIS.

MANTEUFFEL, *mân'toy-fêl*, EDWIN HANS CARL, Baron von 1809, Feb. 24—1885, June 17; b. Magdeburg, Germany: soldier. He entered the Prussian army 1826; was appointed an aide to the king 1848; was prominent in the reorganization of the Prussian army; and became lieut.-gen. and chief of the milit. cabinet 1861. In 1864 he was conspicuous in the Schleswig-Holstein war, and had charge of the operations that culminated in the occupation of Jutland. After the close of the war he arranged the convention of Gastein, which adjusted the difficulties between Austria and Prussia, and was then appointed milit. and civil gov. of Schleswig, and commander of the Prussian troops in Holstein and of the naval station at Kiel. In the Austro-Prussian war, 1866, he commanded the chief army of the Main, and received the order of merit from the king for distinguished services. After executing a diplomatic mission to St. Petersburg, he became gen. of cav., gen. in command in Schleswig-Holstein, and commander of the 9th army corps; and 1868 was appointed commander of the 1st army corps. In the Franco-German war he commanded the 1st corps before Metz; captured Rouen, Amiens, and Dieppe with the 1st grand German army; and with the s. German troops drove Bourbaki's French army of the east into Switzerland. He was commander-in-chief of the German army of occupation in France 1871-73; appointed field marshal gen. and aide-de-camp gen. to the emperor, and invested with the Black Eagle 1873; and became gov. of Alsace-Lorraine, where he instituted a conciliatory administration, 1880.

MAN'TIDÆ: see **MANTIS**.

MANTIGER, n. *măn'ti-jêr* [L. *mantichōra*, a beast having the face of a man and the body of a lion]: a large variety of baboon.

MANTIGER, *măn'ti-jêr*, or **MANTÈGRE**: heraldic monster with the body of a tiger, the head of an old man, and long spiral horns; one of the imaginary creatures known in heraldic blazon, and is variously represented, sometimes with the horns of an ox and feet of a dragon.

MANTILLA, n. *măn-til'lă* [Sp.]: a sort of scarf or short mantle.

MANTINEA, *mân-tê-nê'a*: famous city of anc. Arcadia, in the Peloponnesus, on the borders of Argolis; on the river Ophis, in a broad plain. M. was famous as the scene of several battles, of which the most important was between the Spartans and the Thebans under Epaminondas, B. C. 362, in which the Spartans were defeated. Its site is now called *Palæopoli*. Some ruins still remain, the principal of which are those of a theatre whose diameter was 240 ft. See Col. Leake's *Travels in the Morea* (Lond. 1830).

MANTIS, n. *măn'-tīs*, **MAN'TISES**, n. plu. *-tīs-êz* [Gr. *mantis*, a prophet]: Linnæan genus of orthopterous insects. which included not only those now constituting

MANTIS.

the family *Mantidæ*, but also the *Phasmidæ* (Leaf-insects, Spectre-insects, Walking-stick insects, etc.). All of them are of very remarkable, and some of grotesque, forms. The *Mantidæ* have a narrow, compressed, and elongated abdomen, and a long thorax, which consists almost entirely of the first segment. The head is triangular, with large eyes, three small stemmatic eyes, and rather long bristle-like antennæ. The wings fold in a fan-like manner, and the wing-covers are long, narrow, and thin. The second and third pair of legs are long and slender, and are used only for locomotion; the first pair are used chiefly as weapons of combat and instruments of prehension, and have the *coxa* unusually long and large; the *femur* also long and large, compressed, and capable of closing on the *coxa*, so that the sharp edges cut like a pair of scissors. The *Mantidæ* feed on other insects, and remain long fixed in one position, moving their fore-legs in the air to catch prey, which has led to a superstitious regard for them as *praying insects*, and to many foolish notions and legends concerning them. One



Mantis Religiosa.

species (*M. religiosa*) is plentiful in s. France and in Italy; others are frequent in warmer parts of the world. The *Mantidæ* not only lie in wait for prey, but move about in quest of it, moving slowly, and advancing stealthily on the victim. Many are large insects. Some of the S. American ones are four inches in length. They are all very pugnacious, the combat terminating usually in the decapitation of one of the combatants, or the dividing of its body in some part by the legs of the other; and the victor enjoys his triumph in eating the vanquished. In China and some other parts of the East, these insects are kept in cages, and set to fight with each other for the amusement of the beholders. Some of the *Mantidæ* (genus *Empusa*) have the forehead produced into a horn.

MANTISSA—MANTLING.

MANTISSA, n. *măn-tis'să* [L. *mantissa*, overmeasure, increase]: the decimal part of a logarithm. Thus the logarithm of 900 being 2.95424, the part .95424 is the mantissa. **MANTIS'SÆ**, n. plu. -sē.

MANTLE, n. *măn'tl* [L. *mantellum*, a cloak; It. *mantello*; F. *mantille*; Sp. *mantilla*; OF. *mantel*, a cloak; F. *mante*, a covering]: a loose outer garment; a cloak; in the middle ages, a long flowing robe worn over the armor, and fastened by a fibula in front or at the right shoulder. The mantle is an important part of the official insignia of the various orders of knighthood. Ladies of rank wore similar mantles, in many instances decorated with heraldic charges, in which case the mantle bore either the impaled arms of the lady and her husband, or her husband's arms only; examples are seen in monumental effigies. In general, a cover or shade; that which conceals; the outer soft membrane of the body of a mollusk: V. to cover; to disguise; to rush to and overspread the face, as the blood, with a crimson color; to spread out, especially in a graceful or elegant manner; to be expanded; to gather a scum on the surface. **MANTLING**, imp. *mănt'ling*: ADJ. spreading; investing; brought up to the top; fermenting: N. in *her.*, representation of a mantle or any drapery. **MANTLED**, pp. *măn'tld*: ADJ. covered as with a mantle. **MANTLET**, n. *mănt'lêt*, a small mantle. In *mil.*, a kind of iron-plated shutter used as a cover or shelter for men working guns in embrasures, casemates, or port-holes, from the bullets of sharpshooters. The mantlet is usually made to be hoisted up while the gunner takes aim, and then lowered to cover the whole opening except a circular aperture for the muzzle of the cannon. With every increase in the range and precision of small arms, mantlets become more essential for the safety of gunners. Mantlets are made of thick fir, of solid oak planks, or of iron plates, the last being preferable, as the lightest. At Sebastopol, the Russians effectively blocked their embrasures by thick mantlets of plaited rope suspended freely. A mantlet of planks or iron plates, about five ft. high, and occasionally mounted on small wheels, also is used to protect sappers working at the end of a sap, though a rolling gabion is preferred for this purpose by many engineers. *Note.*—When connected with the fireplace *mantel* should be the spelling, and *mantle* when a cloak or covering is signified.

MANTLING, *mănt'ling*, or **LAMBREQUIN**, *lăm'bèr-kîn*: heraldic ornament depicted as hanging down from the helmet, and behind the escutcheon. It is considered to represent either the cointise, an ornamental scarf which passed round the body, and over the shoulder; or the military mantle, or robe of estate. When intended for the cointise, it is cut into irregular strips and curls of the most capricious forms, whose contortions are supposed to indicate that it has been torn into that ragged condition in the field of battle. When the M. is treated as a robe of estate, the bearings of the shield are some-

MANTUA.

times embroidered on it. A M. adjusted to form a background for the shield and its accessories constitutes an *Achievement of Arms*.



Mantling.

In British heraldry, the M. of the sovereign is of gold lined with ermine; that of peers, of crimson velvet lined with ermine. Knights and gentlemen have generally crimson velvet lined with white satin; but sometimes the livery colors (see *LIVERY*) are adopted instead, as is generally the practice in Continental heraldry.

MANTUA, n. *mān'tū* [*F. manteau*, a cloak—from *mante*, a mantle—from mid *L. mantum*, a short cloak: *Sp. manto*, a mantle]: a lady's gown or cloak. **MANTUA-MAKER**, a lady's dress or cloak maker.

MANTUA, *mān'tū-a* (Ital. *Mantova*): fortified city of Italy, cap. of the province of M.; anciently cap. of a duchy in Lombardy; 95 m. e.s.e. of Milan, 25 m. s. of Verona; lat. 45° 9' 34" n., long. 10° 48' 1" e. Pop. (1901) 29,142, comprising a number of Jews, whose commercial influence and social privileges are greater in M. than in any other city of Italy. M. occupies two islands formed by branches of the Mincio, the waters of which surround the city, with the additional defense of swamps or marshy lakes. It is the most strongly fortified town in the kingdom, and its defenses are fitted to accommodate 30,000 to 40,000 soldiers; but, owing to its situation, it is extremely unhealthy—a fact evinced by the pallid faces of the inhabitants. There are five gateways into the city, one of which, *La Porta dei Mulini* is very noticeable. The fortifications of M., including its vast citadel, present such a combination of defensive resources, that its regular investment could be effected only by a numerous army; and its reduction even then would be impracticable, except by famine. It forms one of the four fortresses of the Quadrilateral, which, by the treaty of Villafranca, remained in the hands of Austria. The streets of M. are spacious and regular, but poorly paved; the squares are numerous and fine. Some of the public buildings are splendid, both from the massive grandeur of their proportions, and the novel beauty of their architecture. The inadequate population of M., added to the sombre character of its feudal structures, imparts to the city an air of gloomy decadence, except in the central commercial quarters, and the populous animated *Ghetto* or Jewish quarter, still subject to inclosure. The ancient ducal palace,

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or Castello di Corte, a vast, irregular pile of building, was the state residence and fortress of the Gonzagas, by whom it was erected, and now serves as a state prison and for public offices. The adjoining sumptuous edifice, which now comprises the *Palazzo Imperiale*, the *Palazzo Vecchio*, and the *Corte Imperiale*, or Provincial Tribunal, was originally planned and begun by Buonacolsi, feudal lord of M., 1302; it contains 500 rooms, including a magnificent suite of state apartments, whose choicest embellishment consists of the paintings and designs of the great Mantuan artist, Giulio Romano. The cathedral of San Pietro, also designed by G. Romano, contains some fine frescoes. The churches of San Martino and Sant' Egidio are of great antiquity—the former dating from 528, the latter from 568.—The *province* of M. had a high reputation in the time of the Romans. After sharing the fate of the rest of n. Italy, it was seized by the Gonzagas about the commencement of the 14th c. The last duke of the House of Gonzaga died childless at Padua 1708, when M. fell into the hands of Austria. Austria gave it up with other Italian possessions in 1866. The province has 903 sq. m.; pop. (1891) 307,768; (1901) 311,942.

MANU, *mā'nō* [from Sanskrit *man*, to think, literally, the thinking being]: reputed author of the most renowned law-book of the ancient Hindus; likewise of an ancient Kalpa work on Vedic rites. It is doubtful, however, whether both works belong to the same individual, and whether the name M., especially in the case of the author of the law-book, was intended to designate a historical personage; for, in several passages of the Vedas (q.v.), as well as the Mahābhārata (q.v.), M. is mentioned as the progenitor of the human race; and in the first chapter of the law-book ascribed to him, he declares himself to have been produced by Virāj, an offspring of the Supreme Being, and to have created all this universe. Hindu mythology knows, moreover, a succession of Manus, each of whom created, in his own period, the world anew after it had perished at the end of a mundane age. The word M.—kindred with our '*man*'—belongs therefore, properly speaking, to ancient Hindu mythology, and it was connected with the renowned law-book in order to impart to the latter the sanctity on which its authority rests. This work is not merely a law-book in the European sense of the word, it is likewise a system of cosmogony; it propounds metaphysical doctrines, teaches the art of government, and, among other things, treats of the state of the soul after death. The chief topics of its 12 books are the following: 1. Creation; 2. Education, and the duties of a pupil, or the first order; 3. Marriage, and the duties of a householder, or the second order; 4. Means of subsistence, and private morals; 5. Diet, purification, and the duties of women; 6. The duties of an anchorite and an ascetic, or the duties of the third and fourth orders; 7. Government, and the duties of a king and the military caste; 8. Judicature and law, private and criminal; 9. Continuation of the former, and the duties of the commercial and

servile castes; 10. Mixed castes, and the duties of the castes in time of distress; 11. Penance and expiation; 12. Transmigration, and final beatitude. See INDIA. The date of the work, formerly stated B.C. 1200, is put by Monier Williams at B.C. 500, and by Max Müller and Burnell at A.D. 500. It was translated by Sir William Jones. See *The Ordinances of Manu*, translated from the Sanskrit, with introduction by Burnell, completed by Hopkins (1886).

MANUAL, a. *mān'ū-āl* [F. *manuel*—from L. *manuālis*, used by or with the hand—from *mānus*, the hand: It. *manuale*]: performed, made, or used by the hand: N. a compendium, or a handbook; a small book that may be conveniently handled; service-book of the R. Cath. Chh.; the key-board of an organ or harmonium. MAN'UALLY, ad. -ly. MANUAL EXERCISE, or MANUAL, in milit. language, systematic exercise with the musket or rifle, through which recruits are drilled, to give them a free use of their limbs, and of the weapon regarded merely as a pike. It comprises the first course of instruction after the rifle has been placed in the learner's hands. MANUAL LABOR, physical employment and with the hands, as distinguished from mental or professional labor. SIGN-MANUAL, the royal signature superscribed at the top of bills, etc.

MAN'UAL TRAIN'ING: strictly, training of the hand, as in most arts; recently and technically, education of all the powers of mind and body, as aided by school practice of the arts, both fine and industrial. Its aim is 'to set the whole boy to work.' As educatory, it is distinguished from trade-training (see TRADE SCHOOL), which, by a brief course, seeks to prepare directly for entrance on a particular handicraft. M. T. may, indeed, develop incidentally an aptitude and taste that will choose to follow an industrial life; it is hoped that this will often be the result, since school methods have hitherto educated the masses too much away from the labors by which the great majority must live. But the main or immediate object is not productive skill. This is true especially so far as the new system concerns itself mostly with primary and grammar schools, or even high schools. It aims to teach practically the elementary principles of as many arts as circumstances admit, or at least the principles common to all; and, in so doing, to train the faculties of attention, comparison, reflection, judgment, constructive imagination, as well as to accustom the senses to accurate observation, and the muscles to facile use. Thus, in a primary department, the exercises may begin with drawing lines and angles and block-building, and go on, in higher grades, to free-hand drawing, mat-weaving, etc.; in the grammar department, constructive drawing, use of tools, printing, or the domestic arts; in the academic department, higher applications. A variety of advantages results. The system has been found to sharpen the mind and the appetite for book study, so as to secure higher scholar-

ship; it awakens keener intelligence; brings science and knowledge to bear, showing their value; quickens and enlarges scientific acquisition; gives earnest tone and spirit of work; satisfies the instinct for activity, and directs it to the useful and beautiful. It impresses knowledge on the memory indelibly; excites self-reliance, concentration, perseverance, diligence, ambition, and the inventive faculty; gives new interest to indoor school-life; improves health by various exercise; takes the place of much of the usual idle and violent gymnastics, and in this way would be a blessing in the highest grades of student-life. The higher moral tone induced has been a matter of strong testimony. Finally, it dignifies labor, and may yet go far to give new shape to the present unhappy labor questions. Certainly, it would bring the educated into more sympathy with labor, and infuse into the ranks of labor more intelligence.

The movement to introduce M. T. into public schools may be dated from the establishment of the St. Louis Manual Training School, by the directors of Washington Univ., 1879, June 6. Since then, the progress has been rapid. By states, alphabetically, M. T. has been introduced into public schools in Washington, D. C.; New Haven, Conn.; Jacksonville, Fla. (colored); four towns in Ill.; Indianapolis, Ind.; one city and two counties in Md.; four cities in Mass.; two cities in Minn.; Omaha, Neb.; Carson City, Nev.; four cities in N. H.; seven towns in N. J.; three in N. Y., including many schools in New York city; three in Wis. Training-schools have been opened in Denver, Chicago, Toledo, Cleveland, Philadelphia, Tidioute, Penn., Baltimore, and Cambridge, Mass.; to which may be added the normal college of the New York Industrial Education Assoc. Normal schools in a number of states include a manual course; also some colleges. The movement, and the supply of competent teachers, have been greatly aided by the establishment, by act of congress 1862, of agricultural and mech. colleges, also by polytechnic schools and institutes of technology; and the kindergartens, kitchen schools, and reformatory schools have illustrated somewhat the working of the system. The age is in sympathy with the movement, as shown by the recent great development of invention and of architecture and household æsthetics, even to the extent of amateur enthusiasm in repoussé work, wood-carving, pottery, and the like. Wealth has given largely to the founding of industrial schools. Charles G. Leland, pioneer introducer of the 'minor arts' into the schools of Philadelphia, says (*Practical Education*, 1889): 'Industrial art in schools—and it should be in all schools as well as families—covers the ground or fills the time intervening between the kindergarten and the industrial school, but it blends with and includes the latter. And it may be observed that the system is capable of being introduced into any school or family or circle whatever, great or small, where there is a preceptor who has some

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little knowledge of drawing, with intelligence enough to apply it, according to the easy rules laid down in certain elementary handbooks of art.' To aid such teachers, he published a series of cheap Art-Work Manuals—viz., on Ceramic Painting, Tapestry Painting, Outline Embroidery, Filled-in Embroidery, Decorative Oil-Painting, Drawing and Decorative Design (outline), Wood-carving, Repoussé Work, Leather Work, Papier-Maché, Modelling in Clay and Underglaze Faience Decoration, and Stencilling. The Messrs. Whittaker, of London, are publishing from Mr. Leland's pen a much greater variety of manuals of art and industry, for the use of educators. See, also, his *Industrial Education in Schools* (U. S. Bureau of Education Circular, No. 4, 1882); Arthur MacArthur's *Education in Its Relation to Manual Industry* (N. Y. 1886), commended by Mr. Leland as the best work known to him; Charles Ham's *Manual Training* (N. Y. 1886); U. S. Bureau of Education Circular, No. 3, and special report on *Industrial Education in the United States*; Charles B. Stetson's *Technical Instruction* (1874); *Industrial Education: a Guide to Manual Training*, by Samuel G. Love, supt. of the Jamestown, N. Y., public schools (1887); and a comprehensive *Report of the Commission on Industrial Education*, made to the legislature of Penn. (1889).

MANUBRIUM, n. *măn-ũ'vrĩ-ũm* [L. *manũbrĩum*, a handle—from *mănus*, a hand]: a name applied to several objects resembling a handle; in *anat.*, the upper piece of the sternum representing the handle, having a somewhat triangular form; the polypite suspended from the roof of the swimming-bell of a medusa, also from the gonocalyx of a medusiform gonophore in the Hydrozoa; in *bot.*, cells projected inward from the centre of shields of the globule in *Charācēæ*.

MANUEL I., COMNENUS, *măn'ũ-ěl kōm-nē'nũs*, Emperor of Constantinople: abt. 1120–1180, Sep. 24 (reigned 1143–80); 4th son of Emperor Calo-Joannes, whom he succeeded on the throne. He became at once involved in an uninterrupted series of wars both with the eastern and with the western nations, and greatly distinguished himself by courage and heroism. In 1144, Raymund, Prince of Antioch, who had thrown off the Byzantine yoke, was compelled by him to submit again to vassalage; and in the following year, the Turks, who had invaded Isauria, were paralyzed by repeated and decisive defeats. In 1147, the Crusaders, under Louis VII. of France, and Conrad III. of Germany, marched through M.'s dominions without hindrance on his part, as he was at this time preparing for his notable contest with Roger, King of Sicily, for the possession of Greece. At first this contest was highly favorable to M.; but after the death of Roger, the fortune of war changed, and peace was concluded, 1155. The rest of his life was spent in wars with the Hungarians and Turks. His disastrous defeat by the Sultan of Iconium, 1176, preyed upon his spirit and brought decline and death.

MANUFACTURE—MANUMIT.

MANUFACTURE, n. *măn'ũ-făk'tūr* [F. *manufacture*; Sp. *manufactura*, manufacture—from L. *mănus*, the hand, and *factūra*, a making—*lit.*, a making by the hand]: the conversion of raw materials by the hand, or by machinery, into articles suitable for the use of man; the articles so made: V. to work raw materials into articles suitable for use by the hand, or by machinery; to make by art or labor; to be occupied in manufactures. **MAN'UFAC'TURING**, imp.: **ADJ.** pert. to or occupied in manufactures. **MAN'UFAC'TURED**, pp. *-tūrd*: **ADJ.** made from raw materials into articles for use. **MAN'UFAC'TURER**, n. *-tūr-ēr*, one who works raw materials into articles of use. **MAN'UFAC'TORY**, n. *-tēr-ĩ*, the house or place where goods are made for use: **ADJ.** employed in any manufacture; often contracted into *factory*.—See **LABOR: MACHINERY, POLITICAL ECONOMY OF: FACTORY: FACTORY ACTS: also, COTTON: LINEN: IRON: SILK: WOOLEN AND WORSTED MANUFACTURES: ETC.**

MANUL, n. *ma-nŭl'* [native name]: *Felis manul*, a cat inhabiting the steppes of Tartary and Siberia. It is about the same length as the wild cat, *Felis catus*, but has longer legs. The fur is yellowish mixed with white; the head is striped, and the tail ringed with black.

MANUMIT, v. *măn'ũ-mīt'* [L. *manumittēre*, to set at liberty, to emancipate—from *mănus*, the hand; *mitto*, I send]: to release from slavery or bondage; to emancipate. **MAN'UMIT'TING**, imp. . **MAN'UMIT'TED**, pp. **MAN'UMIS'SION**, n. *-mĭsh'ŭn* [F.—L.]: the act of giving a slave his freedom.

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MANURE, n. *mă-nūr'* [OF. *manouverer*, to hold or possess—from F. *main*: L. *mānus*, the hand; F. *ouvrier*; L. *operārī*, to work: OE. *manure*, to occupy or cultivate land]: any matter or substance added to the soil to fertilize it: V. to apply any fertilizing matter to land; to fertilize. **MANU'RING**, imp.: N. a dressing of manure on land; the act or practice of applying manure to land; in OE., cultivation by manual labor: ADJ. cultivating by manual labor. **MANURED'**, pp. *-nūrd'*, dressed with manure. **MANU'RER**, n. *-rér*, one who applies manure.

MANURE': any substance used to increase the productiveness of the soil under cultivation or which is capable of promoting the growth of plants. Animal excrement was doubtless the first and for a long period the only substance so used. Observation of the luxuriant growth which appears where ashes are strewn probably led to the early employment of this material, and as man advanced in civilization other things were found to act as food for crops and were utilized for that purpose. Since the beginning of the 19th c. the discoveries of chemists have not only shown how certain substances increase plant growth, but they have also added various articles to the list of valuable manures. Several of these substances are now largely sold, either separately or compounded, and are known under the general name of commercial fertilizers (see **FERTILIZERS**).

The necessity for the use of M. upon soils used for production of plants arises from the fact that the crops which the farmer takes from the land remove, in varying quantities, but with absolute certainty, the elements of fertility from the soil. Where nature is allowed to carry on its work unmolested there is gradual increase in fertility. The plants which grow upon the land also decay where they grow, and return all the elements which they had taken from the soil, together with valuable material which they had obtained from the air. But under the best possible system of cultivation the elements taken from the soil are not all returned; while under the careless methods often prevalent they are rapidly abstracted. The farmer sells his crops and with them sells certain elements which make his farm productive. He is selling not merely the product of the land, but practically the land itself. He must return, in some form, the mineral elements which the plants have abstracted, or his land will become impoverished. This fact, though of vital importance, was long overlooked and by the great mass of farmers is still inadequately recognized.

In the United States vast quantities of M. are annually wasted. Though not confined to any one section, this evil is more extensive in the west than in the older settled portions of the national domain. In those localities which have but recently been brought under cultivation, and in which the virgin soil has not yet become exhausted, large piles of M. are allowed to accumulate around the barns and are finally removed only on ac-

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count of the inconvenience which they cause. Vast quantities of the most valuable farmyard M. have been thrown into rivers because the owners thought their land would be permanently productive without its use. In the older settled states the evil results of this course led to its abandonment and to a very general effort to save this valuable material.

The various kinds of M. differ greatly in constituent elements and in value for the production of crops. The principal elements which make them useful to the farmer are nitrogen, phosphoric acid, and potash. These elements are indispensable to plants, and are likely to become exhausted from the soil much sooner than any of the other substances supplied by the land. The larger the proportion of these elements to its total quantity, the more valuable is the M. And, up to a certain point, the more liberal the quantity of M. applied, the more luxuriant will be the growth of crops.

The only substitutes for the use of M. are fallowing and tillage; and when used in this manner they but imperfectly serve the purpose. They retard but do not prevent the exhaustion of the soil to a point at which it will not produce profitable crops. In fallowing, the coarser particles of the earth which contain elements needed by plants are disintegrated by the action of the elements, and a natural process of recuperation goes on while the land is lying idle. The liberation of plant food which is locked in the soil is still more rapidly effected by tillage. A common proverb asserts that 'tillage is manure,' and in its original meaning it is claimed that the word M. conveyed the idea of tillage. Tillage also makes the soil more recipient of desirable elements from the atmosphere. But as the removal of crops abstracts the elements of fertility from the land, and as neither the fallowing nor tillage adds anything to the soil, but merely renders available the materials which it previously contained, it is evident that something more will be required if large crops are to be produced without impoverishment of the land. Wherever land commands high price, fallowing cannot be adopted as a substitute for M. on account of the great expense involved in allowing the soil to lie unproductive. The great cost of labor will also prevent the general adoption of tillage for that purpose, though it will always prove a valuable auxiliary.

While there is an inevitable waste in the removal of crops from the soil, there is a great difference in the rapidity with which different plants exhaust the land. For, while all plants require the same elements, the different classes use them in different proportions, and some make heavy drafts on the substances with which the soil is not liberally supplied. The sale of grain crops from the farm reduces its fertility much more rapidly than the sale of butter, wool, or meat. In the latter case the products of the land are largely fed to animals, and a considerable portion of the elements of plant food which

the crops contained is returned to the soil in the form of M. If the animals are liberally supplied with grain, and their excrement is carefully saved, the soil can easily be kept productive. This is due to the fact that animals assimilate the carbonaceous elements of their food and use only a very small proportion of its mineral substances; while plants obtain their carbon principally from the air, which always furnishes an abundant quantity, and take their mineral constituents from the soil. And as the richest foods for cattle are also the best foods for plants, it follows that high feeding of animals is one of the surest, as it is also one of the cheapest, means for securing luxuriant crops. The fact of the intimate relation between the feeding of the live stock and the productiveness of the land was observed long before the reason therefor was discovered.

Farmyard M. is what is known as a complete fertilizer. It contains all the elements which need to be added to the soil to promote the growth of plants, but does not always furnish them in the best proportions. Certain crops are benefited by the application to the soil of fertilizers rich in special elements, as potash, or phosphoric acid. Soils sometimes become deficient in only one of the elements required, and are greatly increased in productiveness by the application of ordinary M. supplemented by ashes, or superphosphate, or some other substance containing the required element in a concentrated yet readily available form. The great proportion of the bulk of farmyard M. is, as far as feeding plants is concerned, wholly inert matter. Careful analyses have shown that one ton of mixed animal excrement contains only about seventy-five lbs. of actual plant food. Upon heavy soils, however, bulky M. exerts a mechanical influence which adds somewhat to its efficiency in crop production.

Liquid M. is often wasted. Upon many farms absorbents are used in the form of bedding for animals with a view to retaining it, and in a few cases it is saved in tanks, but in too many instances no effort is made to secure it, though in equal quantities it is much more valuable than solid excrement. The latter is often injured by undue fermentation and by being leached by rains. In the older settled portions of the country increased attention is being given to adding to the M. supply by the use of straw and other valuable substances, and by composting with muck or some other absorbent material.

In addition to the substances which contain plant food in considerable quantities there is a class of materials, e.g., lime, salt, and plaster, which though supplying but little matter directly to the crops are very efficient in liberating the elements of fertility which are locked up in the soil. Lime, in particular, acts quickly upon the organic matter which the land contains. It is sometimes used to excess, and causes practical exhaustion of the soil.

The value of the returns from M. depend largely upon

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The manner of its application and the degree of tillage which the crops receive. The practice, once very common, of plowing in the M. is gradually being superseded by the better method of spreading upon the surface and covering but slightly, if at all. Drawing from the yards is also often done in winter instead of in the spring and fall, as was formerly the custom. When spread upon grass land, the M. should be finely pulverized, and when used upon plowed land it should be not only made fine but also be equally distributed and thoroughly incorporated with the soil.

GREEN MANURE.—The use of green crops for M. has been practiced to a limited extent for a long period. It was known to the ancient Greeks and Romans, but has never been generally adopted in any age or land. In this country many efforts have been made to render it popular, but the benefits which it confers are offset by too many disadvantages to admit of its universal acceptance.

The plants principally used for green M. are clover, buckwheat, millet, and the cow pea. The first is used in the north more than all the others combined, and is the typical plant for fertilizing the land. The last is grown only at the south, and in that section is as popular as is clover at the north. Clover is frequently but improperly called an 'enriching' crop. Its roots are large and long. They penetrate the soil to a great depth and bring nearer the surface mineral elements which were already in the land, but which were beyond the reach of the roots of the ordinary grain crops. The clover plants also secure nitrogenous elements to some extent from the soil and the atmosphere, but their main office as fertilizer is not in adding to the stock of plant food already on hand, but in rendering it available for the use of crops which have smaller roots and are more delicate feeders.

When grown for hay and sold from the farm, clover proves an exhausting crop. If fed to cattle and if the manure obtained therefrom is returned to the land, it proves of great value. When grown merely as M., the clover is usually plowed into the ground in the spring, and corn or potatoes are planted at once. The decay of the roots, which contain large stores of mineral matter which they have brought from the lower strata of the soil, supplies the plants with valuable nutriment, and often produces large yields. Sometimes, after the clover is turned in, the land lies idle until fall, when wheat is sown, but as it involves a loss of use of the land for a whole season, this is an expensive method. When grown only partially as M., the first crop is taken in June for hay and the second is plowed under in Aug. to fertilize the land for the wheat, which is put in during the following month. As the clover when cured is valuable food for cattle; and as they use mainly the portions not specially needed by plants while the mineral elements essential to the growth of crops are almost wholly excreted, it appears to be more profitable to grow and

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use it for hay than to plow it into the land with practical loss of the portion which the animals would assimilate, and on which they would thrive.

MANUS, n. *mā'nūs* [L. *mānus*, the hand]: the hand of the higher vertebrates.

MANUSCRIPT, n. *mān'-ū-skript* [L. *mānū*, with the hand; *scriptus*, written: F. *manuscrit*]: writings of any kind by the hand, on paper, or on other material; contracted into MS.; plu. MSS. ANCIENT MANUSCRIPTS: see PALÆOGRAPHY.

MANUSCRIPTS, ILLUMINATION OF: art of painting manuscripts with miniatures and ornaments, an art of the most remote antiquity. The Egyptian papyri of the ritualistic class, as old as the 18th dynasty, are ornamented with vignettes or miniatures, attached to the chapters, either designed in black outlines, or painted in primary colors in tempera. Except these papyri, no other MSS. of antiquity were, strictly speaking, illuminated; the Greek and Roman MSS. of the 1st c. that have reached the present day being written only. Pliny, indeed, mentions from Varro that authors had their portraits painted on their works, and mentions a biographical work, with numerous portraits introduced, but all such have disappeared in the wreck of ages; the oldest illuminated MSS. which have survived being the *Dioscorides* of Vienna, and the *Virgil* of the Vatican, both of the 4th c., and ornamented with vignettes or pictures in a Byzantine style of art. St. Jerome, indeed, in the same century, complains of the abuse of the practice, as shown by filling up books with capital letters of preposterous size; but the MSS. of this and the subsequent century are ornamented with rubrics only, as evidenced by the *Codex Alexandrinus* and other manuscripts. Probably the art of illumination was derived from rubrics, as the emperors in the 5th c., commencing with Leo (470), signed in this color, like the Chinese, and this 'vermilion reply,' adopted by Charles the Bold in the 9th, continued till the 13th c. The art of illuminating MSS. with gold and silver letters is supposed to have been derived from Egypt, but it is remarkable that no papyrus has any gold or silver introduced into it. The artists who painted in gold, called *Chrysographi*, are mentioned as early as the 21 c. One of the oldest MSS. of this style is the *Codex Argenteus* of Ulphilas (360); and the charter of King Edgar (966), six centuries later, shows the use of these letters. Gold letters seem to have been used in the East during the 12th and 13th c. At an early period, the use of illuminated or decorated initial letters commenced, which is to be distinguished from the illuminated or painted pages placed at the head of Byzantine MSS. Originally, they were not larger or more colored than the text; but the Syriac MSS. of the 7th c. have them with a pattern or border: and they go on increasing in size and splendor from the 8th to the 11th c., when large initial letters, sometimes decorated with little pictures or miniatures,

came into fashion in the Greek and Latin MSS. The subjects of the figures mixed with the Arabesque ornaments often referred to the texts; warriors and warlike groups of figures being introduced when the text referred to war; symbolical representations of hell, where the chapters following treated on that region. These initial letters soon increased to a great size, being from 2 to 24 inches long; they were used most in the 8th and 9th c., but continued till the 12th c., and degenerated in the 16th to the last decadence of art—the grotesque. The art which flourished in the Eastern and Western Empires passed over to Ireland, and there gave rise to a separate school or kind of illumination. This style, which consists in a regular series of interlaced ribbon ornaments, often terminating in the heads of gryphons and other animals, seems to have been derived from the later patterns of Byzantine art, seen on mosaics, mural paintings, and other objects. Some, indeed, have thought that they are of oriental origin. The so-called Durham Book, in the British Museum, of the 8th c. is a splendid example of the school established in Holy Island by St. Aidan, and in Kent by St. Dunstan, before the end of the 6th c. A remarkable MS. of the 6th c. is the Book of Kells (q.v.), at Dublin. The Scriptorium of the monastery at Hyde, near Winchester, was famous at this period for its illuminations; and the celebrated St. Dunstan of Glastonbury applied in early youth his talents to this art. The minute size and number of interlacements of the *Book of Kells*, at Dublin, is quite wonderful; while the *Benedictional* of Chatsworth, executed by one Godemann of Hyde for Ethelwold, Bp. of Winchester (1100), exhibits a bold style of art and ornament. Separate schools prevailed in the 11th c., the Greek or Byzantine MSS. of the period exhibiting a fine style of ornament derived from the Byzantine school; while the Latin MSS. of the period are distinguished by the use of a light blue and green in titles and pictures. While, however, the ornaments of the Byzantine and Latin schools were of a more purely architectural character, and the Anglo-Hibernian, Saxon, and even Franco-Gallic MSS. of Charlemagne and his successors exhibit a union of Roman and Gaulish treatment, a new kind of work was arising in the 10th c. in England, called the *Opus Anglicum*, resembling more in character the ornaments of Gothic architecture, a remarkable specimen of which is seen in the Gospels made for Knut or Canute. During the 12th c. there arose a new style, distinguished by profusion of ornamentation, intricate mode of illumination, and abundant use of gold and silver. The taste was false, but the art had become more special, blank spaces being left for the limners to fill in. In the 13th c., the art still more deteriorated in w. Europe—long-tailed illuminated initial letters were introduced; the background was often of gold, on which the ornaments and subjects were colored in a style resembling oil-painting, 1190–1230; manuals were then prepared to instruct the limner, and the art was formalized.

MANUTIUS.

The Gothic style of ornament of this age had superseded the Roman or Byzantine of previous centuries. In the 14th c., the art greatly improved; the border or ornament running all round the page was introduced, and the ornaments were interpolated and enriched with miniature pictures, even by celebrated artists, as Niccolo Pisano, Cimabue, Giotto, in Italy. Few volumes, however, were illuminated till after the reign of Edward I., when the art took a further development; grotesque figures were introduced, and are alluded to by writers of the period. In the 15th c., continuous borders and fine miniature pictures were in use, and toward the end of the century, celebrated works of this nature were produced by Giulio Clovio in Italy, and Lucas van Leyden in Flanders, the Van Eycks, and Memling or Hemlink; medallions of exquisite style and finish were inserted in the border. Of this age, the most beautiful known specimen is the *Book of Hours* of Anne of Brittany, wife of Louis XII., with borders of natural plants on a gold ground. The Italian art of the same age was symmetrical rather than picturesque and naturalistic, but on solid backgrounds; the ornaments, though resembling those of preceding centuries, are distinguished by the introduction of miniatures. In the 16th c., in the reign of Louis XIV., the art became extinct, ending with a style of painting called *camaïeu gris*, a kind of monochrome, in which the lights are white or gold, and shaded so as to emulate bas-reliefs. Among oriental nations, the Persians, Hindus, and Chinese have illuminated MSS. of great beauty, none of which, however, can compete with those of the Western nations in antiquity. For beauty of design, some of the Arab MSS. are charming, but their antiquity does not reach beyond the 13th c. The Chinese Buddhists have also illuminated classics, or religious books of their sect, one of which, the *Diamond Book* as it is called, in the British Museum, has a text splendidly printed in silver and gold letters on a blue ground; and the vignettes charmingly painted in tempera, on macerated leaves of the *Ficus Indica*.

Humphrey, H. Noel, *Art of Illumination* (12mo, Lond. 1849); Shaw's *Illuminated Letters*. (fol. 1828); Bradley, J. W., *Manual of Illumination* (12mo, Lond. 1860).

MANUTIUS, *ma-nū'shī-ūs*, ALDUS; or MANUZIO ALDO (*Aldo*, diminutive of *Theobaldo*, his baptismal name): great printer and improver of the art of printing: 1450–1515; b. Sermoneta, in the Papal States. His name, in its Italian form, is spelled in three different ways by himself or his descendants, viz., Manuzio, Manuzzi, and Manucci; while from his patron, Alberto Pio, Lord of Carpi, he took also the name Pio, and after 1503, always designates himself Aldo Pio Manutio Romano. He is often called Aldus *the Elder*. He established a printing press at Venice 1490—though the first book bearing a date has 1494 (see ALDINE EDITIONS). See *Didot, Alde Manuce* (1875).—His son PAULUS M., or Paulo Manuzio (1512–74), conducted his father's business after 1533.—The

MANX—MANZONI.

son of Paulus, **ALDUS M.**, junior, or Aldo Manuzio, junior (1547–97), succeeded to the business, but with less original merit.—The last two were notable authors.

MANX, n. *mǎngks*: the old language of the Island of Man: **ADJ.** belonging to the Isle of Man, as *Manx* cat.

MANX CAT, n. *mǎngks*: variety of the domestic cat (*Felis domestica*), native of the Isle of Man, distinguished by having no tail or only a rudimentary one. It is now rare.

MANY, a. *měňĩ* [Goth. *manags*, much; *managei*, a multitude: Dut. *menig*; Ger. *mancher*; F. *maint*, many: comp. Gael. *minig*; W. *mynych*, often, frequent]: consisting of a great number; numerous; not a few; used as a common prefix, as *many-headed*, *manifold*: **N.** a great number of individuals; a multitude; the people. **MANY-TIMES**, often. **TOO MANY**, more than enough; over-powerful. **THE MANY**, the greater number; the crowd; the people.—**SYN.** of ‘many, a.’: frequent; manifold; various; multiplied; sundry; divers.

MANYPLIES, n. plu. *měňĩ-plĩz*, in *Scot.*, **MONIPLIES**, n. plu. *mũňĩ-plĩz* [*many*; L. *plícō*, I fold]: the popular name for the omasum, or third stomach of ruminants, so named from its numerous flaps or folds.

MANZANILLO, *mân-sâ-něľ'yō* or *mân-thâ-něľ'yō*: seaport on the s.e. coast of Cuba, having an excellent harbor, and exporting sugar, tobacco, and timber. Pop. 5,643.

MANZONI, *mân-dz'ō'ně*, **ALESSANDRO FRANCESCO TOMMASO ANTONIO**: Italian novelist: 1785, Mar. 7—1873, May 22; b. Milan; son of Count Manzoni, and of the daughter of Marquis Beccaria. From youth, his literary predilections gave token of his later mental development. In 1806, at the age of 21, his essay on poetry, *Versi Sciolti*, was inspired by the death of a friend; and 1810 his sacred lyrics called forth general admiration. Several tragedies, written with much spirit and originality, attracted notice not only in Italy, but also in France and Germany; and foremost amid his warm admirers and favorable critics was Goëthe. The work, however, by which M. attained European fame is his historical novel, *I Promessi Sposi*—a Milanese story of the 17th c., translated into German, English, French, and other tongues—(3 vols. Milan 1827), by which a new era may be said to have been created in the fictitious literature of Italy. The tale abounds in interesting sketches of national and local Italian customs and modes of life, portrayed with unflagging spirit and humor; while various grave historical events are narrated with force and grandeur of style, especially the episode of the plague in Milan. M.'s ode to Napoleon (1823) is noble in thought and diction. The poet's later years were spent in strict and devout seclusion, the free tendency of his early opinions having been succeeded by a stringent conformity to the doctrines of Rome. A complete edition of his works, 5 vols., was published by Tommaseo, Florence (1828–9).

MAOR—MAORIES.

MAOR, *mâr*: royal official who, in the early periods of Scottish history, was placed over crown or fiscal lands, and in later times became the Thane. A similar official, the Maer, existed in Wales.

MAORI, n. *ma-ō'ri* or *mow'ri* [New Zealand word, meaning *indigenous*]: one of the native inhabitants of New Zealand: ADJ. belonging to.

MAORIES, *ma-ō'riz* or *mow'riz*: name by which the inhabitants of New Zealand call themselves, and that by which they are now usually designated by ethnologists. The M., in common with the natives generally of Polynesia, belong to the Malay race or family of mankind. Though calling themselves indigenous, the M. have a tradition that their ancestors migrated to the present seat of the nation from the island of Hawaiki about 500 years ago. They came in seven canoes, which had outriggers, to prevent foundering; these vessels were called Amatiatia, being very different from those subsequently used by them, which were much simpler in construction, and named Wakka. The first of these canoes that touched at New Zealand was named Arawa, and this brought over the first settlers from whom the M. are descended. If any faith is to be attached to this tradition, Hawaiki was, probably, the same as Hawaii, the principal of the Sandwich Islands, about 4,000 m. n.e. of New Zealand. Some, however, suppose that it may have been Savaii, one of the Samoan or Navigators' Islands, a group not half as far away. The tradition says nothing of any indigenous population found in New Zealand at the arrival of these immigrants. Many writers, however, incline to the belief that it was previously inhabited by a darker race, somewhat akin to the Papuas of New Guinea, sometimes called Negritos and Pelagian negroes. If the two races, in process of time, intermingled, this might account, in some measure, for the differences apparent between the M. and the Tahitians, Samoans, Sandwich Islanders, and other natives of the Pacific. But whether of pure or mixed race, all testimony combines in representing the M. as a nation standing very high in the scale of physical humanity. The skin of the Maori is in general of olive-brown color, but there are some in whom the shade is much lighter, while in others it is darker. In stature they almost equal Englishmen, and have powerful muscular development. They have well-shaped, intellectual heads, and their features, when not tattooed, might almost be taken for European. Few have beards or whiskers, it being an immemorial custom with them to pluck out the hair on the face with pipi shells. On the head, the majority have long black hair, with a slight wave in it; but with some it is of reddish tinge, and some have the hair slightly frizzled. Their eyes are large, their lips thick, and their teeth, unlike those of most savage nations, are large and irregular. The women are of less stature than the men in proportion, and are in other respects inferior to them, perhaps from their marrying too young and having to perform too

MAORIES.

much of the drudgery of life. Some of the women, however, are represented as being delicately molded, with long eyelashes, pleasing features, and a plaintive, pathetic voice, which makes them highly interesting. Both sexes used to practice tattooing, a custom which has been almost abandoned since the conversion of the M. to Christianity. It was a painful operation, performed with a hammer and saw-like chisel. The punctures were stained with vegetable dyes, and the patterns, which extended over the face, hips, thighs, etc., represented ornamental scrolls and figures, supposed to denote the rank of the individual wearing them. The women were but slightly tattooed, with a few lines on the lips, chin, and occasionally other parts of the body. The priests were the principal operators, and during the process, ancient songs were sung, to encourage, divert the attention, and increase the patience of the sufferers. This tattooing was supposed to make the Maori youth both more terrible in the eyes of his enemies, and more acceptable in those of his mistress. Another remarkable custom among the M. was that of the *taboo*, by which the priest could make certain persons and things sacred and inviolate. This was partly a religious and partly a political ordinance, and was so much respected, that even in war-time hostile tribes left unharmed all persons and things thus protected by the *taboo* of the opposite side. Cannibalism, heinous and abominable, practiced so lately as within the last half century, was universal among the M. before their conversion to Christianity. The last instance of it occurred 1843. 'Now, however,' says Dr. Scherzer (*Voyage of the Novara*), 'any allusion to this revolting practice is very painful to the New Zealander, as reminding him of his former low position in the scale of nations. Every time that we endeavored to make any inquiry of the natives respecting this custom, they withdrew with an ashamed look. In like manner, dogs' flesh has ceased to be an article of food, ever since the introduction of pork by Captain Cook. Formerly, the native or Maori dog, which at present is very scarce, was eaten on certain occasions, while its blood was conspicuous in Maori pharmacy.' Infanticide, which also prevailed among them in their days of heathenism, is now universally abolished, likewise slavery and polygamy. The M. generally marry very young, and instances are known of females among them becoming mothers even at the age of eleven years. Their marriages, however, are not very productive, three in a family being considered a good average, and many of these dying in their first year. It is difficult to account for this, seeing that the M. of the present day are not addicted to intemperance, like other half-civilized tribes. The wars of the M. were formerly carried on with spears and clubs of various kinds, manufactured from stone and wood. Their most remarkable weapon was a spear of nephrite, which descended among the principal chiefs from father to son, and was regarded as a kind of sceptre,

and even a sacred object. It was called *Merimeri*, 'the fire of the gods,' and was sometimes used for scalping prisoners. There are other weapons of nephrite in use among the M.; they are much sought after, and very costly. The use of firearms is now, however, general among the M., and that they are adroit marksmen has been made apparent in their contests with English troops. The language of the M., like the Polynesian languages generally, belongs to the Malay family. Its alphabet comprises only 14 letters, viz., A, E, H, I, K, M, N, O, P, R, T, U, W, and Ng. Seven moderately distinct dialects are spoken among them. The language is represented as rich and sonorous, well adapted for poetical expression, especially of the lyric kind. The M. have an abundance of metrical proverbs, legends, and traditions, of which a collection has been made by Sir George Grey. They are passionately attached to music and song. More than five-sixths of the M. are now converted to Christianity. Of these, such as live within the English settlements are becoming gradually assimilated to British colonists, mostly wearing the European dress, etc., while those further removed are content with the blanket, which has superseded the native cloth. They generally practice agriculture, but will not work very hard. They are good sailors and fishermen, and, indeed, more than a hundred coasting vessels of good size are now the property of natives. The M., however, as a nation, though ready to imitate European customs, are not quite contented with British colonial rule. In 1861, hostilities commenced between the M. and the British, which terminated in favor of the latter the following year. In 1863, war broke out again, the M. having conspired to expel the British troops. In 1868, they massacred many of the settlers, and resisted, to desperation, the troops sent to quell them. Since 1869 they have been perfectly peaceful. In 1901 the M. numbered 43,143.

MAORMOR, *mâr'môr*: the old equivalent of the earl in Scotland, like the Maor (q.v.), but placed over an earldom or county instead of a barony, acting as royal deputy or steward over the territory of which he had at a still earlier period been the independent lord, and probably retaining to himself the third part of the royal revenues and prerogatives. Prior to the introduction of feudalism, Scotland seems in theory to have been subdivided into maormordoms, each made up of the M.'s portion and the king's, in later language, the earldom and the regality, over both of which the M. exercised his office, though the former was, in a special sense, his own. Practically, however, in certain of these districts the king retained both maormordom and regality in his own hands, and the maors held their thanages directly of the sovereign, without the intervention of a maormor. As the feudal system extended, the maormors were converted into earls, who were confined within the limits of their own districts, the Earl of Fife alone retaining the privilege of exacting his rights over the whole province.

MAP.

MAP, n. *măp* [Sp. *mapa*, a map; L. *mappa*, a table-napkin: It. *mappa*: F. *mappe*]: picture of the earth, or a part of it, on a flat surface—usually on paper or cloth: V. to draw or delineate any portion of land. MAP'PING, imp.: N. the art or practice of planning or drawing maps. MAPPED, pp. *măpt*. *Note*.—The first maps were maps of the world, and called in OE. *mappe-mounde*, a F. form of L. *mappa-mundi*, map of the world.

MAP: delineation, on a plane, of some portion of the surface of a sphere, celestial or terrestrial, on which the objects intended to be shown are traced, whether stars or towns, mountains, etc. Terrestrial maps are termed *geographical*, when they refer to the land; and *hydrographical* maps, or *charts*, when they delineate the shores of the sea. A perfect representation of a country, with all its parts in true proportions and relative positions, may be made on a globe; but, since the surface of the earth is spherical, it is not possible so to delineate any large portion of it on a plane as to retain these properties. Hence geographers resort to different methods of representation called projections (q.v.), which are of two kinds—either real perspectives from different points of view, or approximative developments. The five principal projections are—the orthographic, the stereographic, the globular, the conical, and the cylindrical, or Mercator's.

In the first of these, the flat surface on which the map is drawn is supposed to pass through the centre of the earth, and, according to the distance of the eye, the projection is either of the first, second, or third kind. In the *orthographic*, the eye is assumed to be at an infinite distance from the centre of the earth, so that all rays of light proceeding from every point in its surface are parallel and perpendicular.

From the nature of this projection, it is evident that while the central parts of the hemisphere are almost accurately represented, toward the circumference the countries are crowded together and diminished in size. On this account it is of little use for geographical, though of considerable value for astronomical purposes. In the *stereographic*, the eye or point of projection is assumed to be placed on the surface of the sphere opposite the one to be delineated. If the globe were transparent, the eye would then see the opposite concave surface. Contrary to the orthographic, this method contracts the centre of the map, and enlarges it toward the circumference. Owing to the unequal area of the divisions, and the difficulty of finding the true latitude and longitude of places, this projection is not much employed. In order to rectify the opposite effects of the two preceding, the globular projection, a modification of the two, is generally adopted. If we suppose the eye to be removed from the surface to a distance equal to the sine of 45° of the circumscribing circle, the projection is called globular. In other words, if the diameter of the sphere be 200

MAP

parts, it must be produced 70 of these parts, in order to give the point of projection.

All meridians and parallels in this projection are in reality elliptical curves, but as they approach so nearly to circular arcs, they are very rarely shown otherwise.

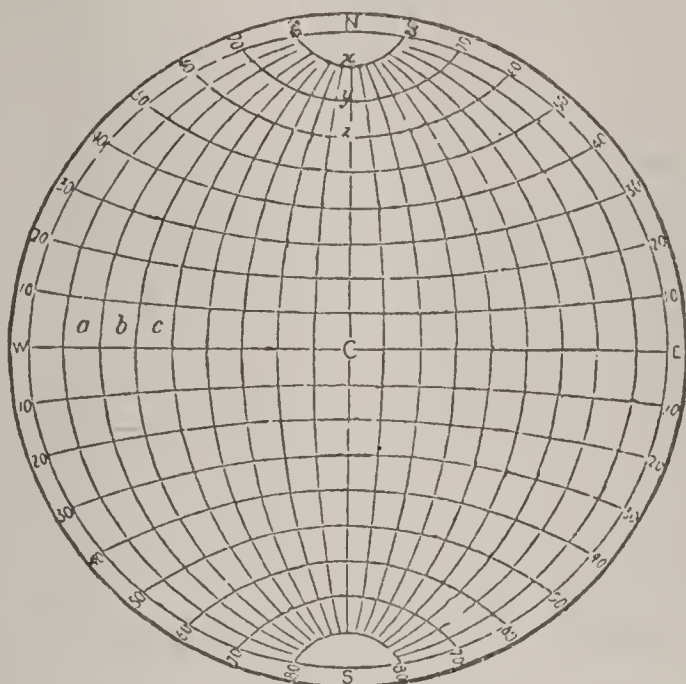


Fig. 1.—Globular, or Equidistant Projection of a Hemisphere.

The construction of the globular or equidistant projection is as follows (fig. 1): Describe a circle NESW, to represent a meridian, and draw two diameters NCS and WCE, perpendicular to each other, the one for a central meridian, the other for the equator. Then N and S will represent the North and South poles. Divide each of the quadrants into 9 equal parts, and each of the radii CN, CE, and C also into 9 equal parts. Produce NS both ways, and find on it the centres of circles which will pass through the three points 80 x 80, 70 y 70, etc., and these arcs described on both sides of the equator will be the parallels of latitude. In like manner, find on WE produced, the centres of circles which must pass through a, b, c, and the poles. Having selected the first meridian, number the others successively to the east and west of it. A map in this way may be constructed on the rational horizon of any place.

The impossibility of getting a perfect representation of special parts of the sphere by any of the previous methods, led to the desire for others less defective. Of all solid bodies whose surfaces can be accurately developed or rolled out upon a plane without alteration, the cone and cylinder approach nearest to the character of the sphere. A portion of the sphere between two parallels not far from each other, corresponds very exactly with a like conical zone; whence it is that conical developments make the best projections for special geographical maps, and even with some modifications for large portions of the globe.

MAP.

A conical projection of Europe (fig. 2) is constructed thus: Draw a base line AB of indefinite length; bisect it

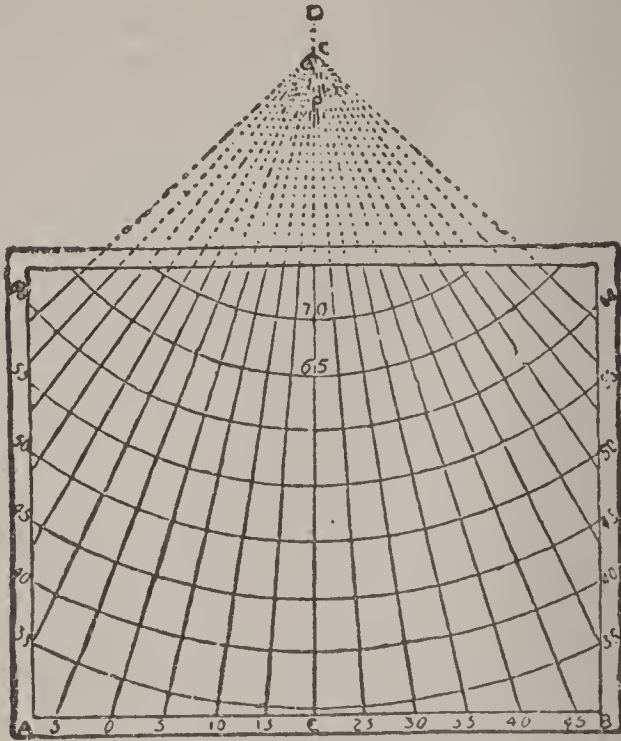


Fig. 2.—Conical Projection of Europe.

in E, and at that point erect a perpendicular ED, to form the central meridian of the map. Take a space for 5° of latitude, and since Europe lies between the 35th and 75th parallels of latitude, mark off eight of these spaces along ED for the points through which the parallels must pass. The centre from which to describe the parallels will be the point in ED where the top of a cone, cutting the globe at the 45th and 65th parallels, would meet the axis of the sphere. This point will be found to be beyond the N. pole, at C. Since on the parallels of 45° and 65° , where the cone cuts the sphere, the degrees of longitude are exactly equal to those on the globe, if on these parallels distances be marked off equivalent to 5° of longitude, in proportion to the degrees of latitude in those parallels, and through these points straight lines be drawn from C., they will represent the meridians for every 5° .

Since all meridians on the globe are great circles, passing through the poles, the n. and s. points at any place correspond with the poles of the earth. The e. and w. points, however, are indicated by a line at right angles to the meridian, and do not, except at the equator, correspond with those of the earth. In all the projections hitherto described, the direction either of the n. and s., or of the e. and w. points, is represented by a curved line, so that on such a map the course of a vessel would almost always be laid down in a curve, which could be described only by continually laying off from the meridian a line at an angle equal to that made with the meridian by the point of the compass at which the ship was sailing. If

MAP.

the vessel were to steer in a direct n.e. course by one of the previous projections, she would, if land did not intervene, describe a spiral round, and ultimately arrive at the North pole; therefore, the mariner requires a chart which will enable him to steer his course by compass in straight lines only. This valuable instrument is supplied by Mercator's chart, in which all the meridians are straight lines *perpendicular* to the equator, and all the parallels straight lines *parallel* to the equator.

Mercator's chart is constructed as follows (fig 3): A line AB is drawn of the required length for the equator. This

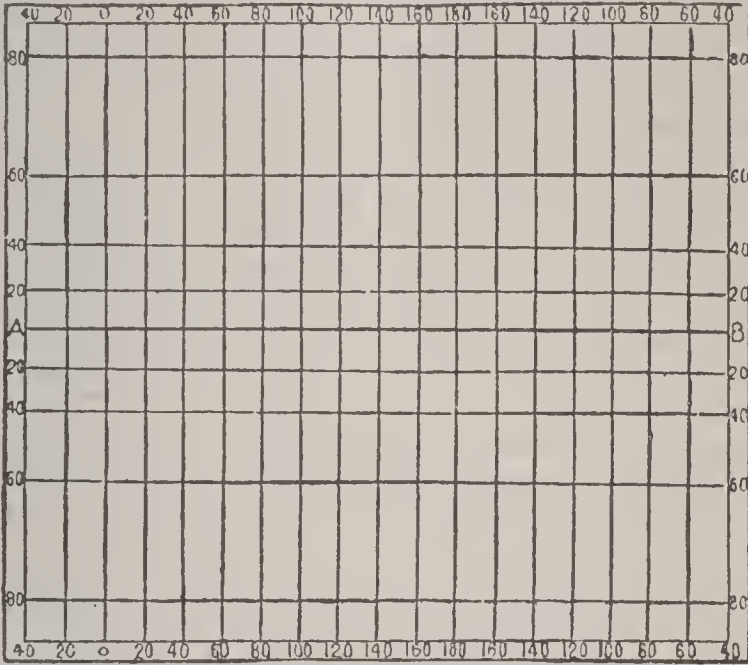


Fig. 3.—Mercator's Projection.

line is divided into 36, 24, or 18 equal parts, for meridians at 10° , 15° , or 20° apart, and the meridians are then drawn through these perpendicular to AB. From a table of meridional parts (a table of the number of minutes of a degree of longitude at the equator comprised between that and every parallel of latitude up to 89°), take the distances of the parallels and of the tropics and arctic circles from the equator, and mark them off to the n. and s. of it. Join these points, and the projection is made.

This projection, of course, does not and is not intended to give a natural representation of the earth, its effect being to exaggerate the polar regions immensely. The distortion in the form of countries and relative direction of places, is rectified by the degrees of latitude being made to increase proportionably to those of longitude. This is the only map which gives an unbroken view of the whole surface of the earth.

The term *map* is applied specially to representations of land, or land and water together; while that of *chart* is limited to the coast and water surface only, showing currents, rocks, anchorage, light-houses, harbors, soundings, and other objects of importance to seamen.

A geographical map proper is a general map of the world, or of a large extent of country. A topographical map differs from it in being limited in area, and much more detailed. Besides purely geographical and topographical maps, others are constructed for special purposes, which may be physical, political, or civil, military, statistical, historical, etc.

In order to construct a map, and to determine accurately the positions of places on it, a knowledge of two elements is essential—viz., latitude or distance from the equator, and longitude or distance e. or w. of the meridian adopted.

Every map, whatever its dimensions, is in some definite relation to the actual size of the globe. This relation is indicated by a scale—a graduated line showing, by its divisions, the number of miles corresponding to any space measured on the map. The scales of geographical maps range from about 800 m. to an inch (for maps of quarters of the globe) to 10 m. to an inch; those of topographical maps range from 1 inch to 25 inches to a mile, the largest admitting the most minute details.

The Ordnance Survey of Great Britain is on the scale of $\frac{1}{63,360}$ of nature, or one inch of paper to one mile of surface.

A recent improvement introduced into the best maps, is printing the water-courses in blue ink, making the orography and skeleton of every country stand out in clear relief.

MAPES (or MAPUS, or MAP), WALTER: famous mediæval writer of Latin prose and verse: b. prob. on the frontiers of Wales about 1143: d. prob. not long after 1208. After studying at Paris, he was attached to the court of Henry II. of England. He acted for a time as one of the king's ambulant judges, and held various ecclesiastical posts. He represented his sovereign at the court of Louis VII. of France, and was a member of the Lateran Council at Rome 1179. In 1196 he became Archdeacon of Oxford, and is last heard of in 1208, within a year or two of which date he seems to have died. Of the rhymed Latin poems, attributed (but very doubtfully) to M., the most notable is the *Goliath series* (*Apocalypsis Goliathæ, Predicatio, Confessio*, etc.), a powerful satire on the corruptions in the church and the vices of the clergy. It is into the mouth of his hero, Father Goliath, a godless, wine-bibbing priest, that M. puts the famous verses, *Meum est propositum in taberna mori*, etc., which, regarded not as a scathing sarcasm, but as a jovial drinking-song, secured for M. the title of 'the Anacreon of the 12th century!' His prose *De Nugis Curialium*, designed to show the shallowness of court life, branched out into a lengthy and most multifarious miscellany, comprising old-world legends, court gossip, contemporary history, and theological polemics. His works were written mostly in French. Probably his greatest achievement is his infusing purity and spiritual purpose into several of the Arthurian legends, which we have in a prose dress ap-

MAPIMI—MAPLE.

parently due to M. : the stories of Lancelot, the Quest of the Holy Graal, and the death of Arthur. His story of the Graal shows a consummate skill which gives him rank among the greatest writers of England : it throws into the background the old paganism of this cycle of legends, and transforms the whole into a high spiritual allegory. The *Latin Poems* were edited by Wright, 1841, *De Nugis*, 1850, and *Quest of the Holy Graal* by Furnivall, 1864.

MAPIMI, *mâ-pē'mē* : desert tract, about 525 sq. m., in n. Mexico ; stretching s. from the Rio Grande ; including portions of the states of Chihuahua, Durango, and Coahuila.

MAPLE, n. *mā'pl*, or MAPLE-TREE [AS. *mapel-treo* : OE. *medle-tree*], (*Acer*) : genus of exogenous trees of nat. ord. *Aceraceæ*. This order contains more than 60 species, natives of temperate parts of the n. hemisphere, and particularly numerous in N. America and n. India. They have opposite leaves without stipules, usually lobed or palmate. The flowers are in axillary corymbs or racemes, small, but abounding in honey, and very attractive to bees. The calyx is generally divided into five segments ; the petals, when present, equal in number to the segments of the calyx, grow from the margin of a fleshy, hypogynous disk. The fruit is formed of two small winged nuts, each with one or two seeds. With few exceptions, the genus *Acer* includes the whole order.—The COMMON M. (*A. campestre*), a small tree, is a native of many parts of Europe and Asia : the leaves are small, and usually five-lobed ; the wood is compact, fine-grained, takes a high polish, and is much used by turners and for carved work. Several nearly allied species are found in s. Europe.—The STRIPED BARK M. (*A. striatum*) of N. America, where it often forms great part of the undergrowth in woods, is remarkable for longitudinal black and white stripes on its bark ; and its wood, which is very white, is used for inlaying in cabinet-work.—The GREATER M. or SYCAMORE (*A. pseudo-platanus*), commonly called *Plane-tree* in Scotland, is a native of various parts of Europe : it attains a height of 70–90 ft., has a spreading umbrageous head, and large, palmate, coarsely serrated leaves on long stalks. It is of quick growth, and thrives near the sea, and in other exposed situations. The wood is white, compact, and firm ; not hard, but capable of fine polish ; and is used by wheelwrights, turners, etc. It is not apt to warp. Stair-rails are often made of it, and pattern-blocks for manufactories, as well as bowls, bread-plates, etc. Sugar is sometimes made from the sap of this tree, as from that of several other maples ; but the species which yields it most abundantly is the SUGAR M. (*A. saccharinum*) of N. America, a species which much resembles the sycamore, and abounds in the northern United States, and in the British possessions, where large quantities of sugar are made from it for domestic use. The trunk of the Sugar M. is generally more slender than that of the sycamore. To obtain

sugar, holes are bored in the trunk when the sap is ascending, early in spring, before the winter frost has passed away, in an obliquely ascending direction, at no great distance from the ground, at first only to the depth of half an inch, afterward deepened to two inches; and the sap thus collected is evaporated in boilers over a brisk fire, to the consistency of syrup, strained and poured into molds, in which it crystallizes into a coarse gray or brown colored sugar. It is sometimes afterward refined to whiteness. Four gallons of sap yield about one pound of sugar. A single tree yields from two to six pounds in a season. During the sugar-making season, sheds are erected in the woods for the boiling and other processes of the manufacture. The sap cannot be kept long after being collected. Good vinegar is made from it, and a kind of molasses much superior in its delicate flavor to that from the sugar-cane, and much used in America with buckwheat cakes, etc. The wood of the Sugar M. has a satiny appearance, and is used for cabinet-making; it is sometimes finely marked with undulations of fibre, and is then known as *Bird's-eye M.*, and is used for veneers. The cultivation of the Sugar M. in Europe, for the sake of its sugar, has of late been advocated. It seems to require a dry and sheltered situation. See SUGAR (MAPLE SUGAR). *A. nigrum*, Black Sugar M., is but a variety.—The MOUNTAIN M. (*A. spicatum*) of the northern states, is a tall shrub.—The WHITE or SILVER M. (*A. dasycarpum*) has deeply lobed leaves, silvery beneath, and is a favorite ornamental tree in the West.—The RED or SWAMP M. (*A. rubrum*) has red twigs, and turns crimson in autumn, flooding the lowlands with color.

MAQUI, *māk'wē* (*Aristotelia Maqui*): only known species of a genus of plants sometimes referred to nat. ord. *Tiliaceæ*, and which has also been made the type of a proposed order. It is an evergreen or sub-evergreen shrub, of considerable size, native of Chili. The flowers are small, green, and yellow, in axillary racemes of no great beauty. The fruit is a three-celled berry, about the size of a pea, black, acid, and eatable; the Chilians make a wine from it. The wood is used for making musical instruments, and the tough bark for their strings. The M. is cultivated in more northern countries as an ornamental shrub.

MAR, *v. mâr* [probably derived from the figure of a person twisting his mouth or making ugly faces, and so temporarily disfiguring his face; Swab. *marren*, to growl angrily, as a dog: OF. *marrir*, to complain; Ger. *schmarre*, a slash, a scar: comp. Gael. *marr*, to obstruct, to hinder]: to injure; to blot; to spoil; to disfigure; to damage. MAR'RING, imp. MARRED, pp. *mârd*. Note.—Skeat agrees with the suggested Gael. etymon in referring MAR, in the primary sense of 'to retard, to obstruct,' to O.Dut. *merren*, to stay, to retard; Dut. *marren*, to tarry; and again, in the senses of 'to dissipate, to lose, to spoil,' he refers to O.H.G. *maro*, tender; Icel. *merja*, 'to bruise, to pound.'

MARABOU FEATHERS—MARAGHA.

MARABOU' FEATHERS: see ADJUTANT.—*Marabou Stork* is the African name for Adjutant (q.v.)

MARABOUTS, or MARABUTS, n. plu. *mār'ă-bôtz* [corruption of Arab. *morâbit*, hermit or devotee, from *ribât*, fortified frontier post]: among *North Africans*, descendants of the *Moravides* (Arab. frontier inhabitants), Arabic tribe, which founded a dynasty in n.w. Africa 1075, and held Morocco and Spain for a considerable period: see ALMORAVIDES. The Almohads arose as a sect among them, and put an end to their temporal dominion; but their descendants exercise to this day a spiritual authority over the Moslem negroes in Barbary, the coast of Guinea, etc. They form a kind of priestly order, officiating at mosques and chapels, explaining the Koran, providing the faithful with amulets, prophesying, and working miracles. They are looked up to with great awe and reverence by the populace, who also allow them a certain vague license over their goods and chattels—their wives not excluded. The Great Marabout ranks next to the king, and the dignity of a Marabout is generally hereditary. One of the most eminent M. of our day was the late Abd-el-Kader (q.v.). The name M. arose thus: pious Moslems early became soldiers against the unbelievers, and were often stationed at frontier military posts, where they spent their leisure in devotion and gained repute for holiness.

MARACAIBO, *mâ-râ-kî'bô*: fortified city of the S. American republic of Venezuela 25 m. from the sea, on a sandy plain on the w. shore of the strait which connects the Lake of M. with the Gulf of M.; lat. 10° 45' n., long. 71° 40' w. It is the chief town of the state of Zulia (formerly called M., 33,075 sq. m.; pop. abt. 90,000; comprising the territory surrounding the Lake of M.) It is a handsome town, with a hot but healthful climate, and has a harbor deep enough for the largest vessels, but inaccessible to those drawing more than 10 or 11 ft. because of the shifting bar at its mouth. The chief articles of export are cocoa, coffee, hides and skins, and cotton. Bricks, leather, saddlery, sugar, rum, and chocolate are manufactured. M. was founded 1571. Pop. (1888) 34,284.

MARACAIBO, LAKE and GULF: in the n. of Venezuela, communicating with the Caribbean Sea. The *Lake* is about 100 m. in length, 70 m. in breadth; of considerable depth, but the bar at its mouth prohibits the entrance of large vessels. It is connected with the Gulf of M. by a strait more than 20 m. in length, and 5 to 10 m. in breadth, which is a wide inlet of the Caribbean Sea, 150 m. from e. to w., and about 75 m. from n. to south.

MARACAN, n. *mâr'ă-kăn*: a species of parrot in Brazil.

MARAGHA, *mâr-râ-gâ*: old town of Persia, province of Azerbijan, 50 m. s. of Tabriz, on a tributary of Lake Urumiah. It is surrounded by walls, and was long the cap. of the province. It contains two bridges of the 11th

MARAI—MARANTACEÆ.

c., and the remains of the observatory of the celebrated mediæval astronomer, Nasir Eddin. Pop. 15,000.

MARAI, n. *mă-ră'*: in the *Pacific Islands*, a sacred inclosure or temple.

MARAJAH, n. *mâ-râ'jă*, improper spelling of MAHARAJAH, n. *mâ'hâ-râ'jă*: a Hindu sovereign prince: see MAHARAJAH.

MARAJO, *mâ-râ-zhõ'*, called sometimes ISLAND OF JOANNES, *zhõ-ân'nēs*: island off the n.e. coast of Brazil, belonging to the province of Para; between the estuaries of the rivers Amazon and Para; 180 m. in length by 125 m. in breadth. In the n.e., it is somewhat elevated, without trees, and covered by herds of cattle. The w. portion is low, and watered by numerous streams. Pop. estimated 20,000.

MARANATHA, n. *mă'ră-nă'thă* [Syr.]: Grecized form of the Aramaic words meaning 'The Lord has come,' or 'The Lord will come;' see I Cor. xvi. 22, where it follows the 'Anathema,' but is not necessarily connected with it in one sentence.

MARANHÃO, *mâ-ra-nyoung'*, or MARANHAM, *măr-an-hăm'*: rich and important maritime state, republic of Brazil; bounded n. by the Atlantic Ocean; 141,939 sq. m. The surface is uneven, but there is no range of mountains. It is quadrilateral in shape, and is watered by numerous rivers, which, falling into the Atlantic, traverse its whole length in a direction parallel with its sides. Its climate is fine, and its soil produces vast quantities of rice, cotton, sugar-cane, and fruits also are extensively grown. Its surface is still to a great extent covered with forests; iron and lead ores and antimony have been discovered; and sheep, cattle, and horses are extensively reared. Pop. (1888) 488,443; (1890) 430,854.

MARANHAO, or SAO LUIZ DE MARANHAO (or MARANHAM): chief city of the state of M. and seventh in rank and importance, and the best-built in the republic. It is on the w. side of the island of M. (28 m. long, 15 m. broad); lat. 2° 30' s., long. 44° 18' w., is remarkably clean, gay, and hospitable, and has been very prosperous; but in recent years its trade has deserted it and has passed to Para. M. is the seat of a bishop, contains a cathedral, ten churches, several monasteries and convents, a lyceum, and other educational institutions. Pop. (1890) 29,308.

MARANO, *mâ-râ'nõ*: town of the province of Naples, Italy, on a gentle slope four m. from Naples. Pop. 7,300.

MARAÑON' (river): see AMAZON.

MARANTACEÆ, n. plu. *mă'răn-tě'sē-ē* [after *Maranti*, a Venetian physician, died 1554], called also CANNACEÆ; natural order of endogenous plants, containing much starch in thin rhizomes and roots; they are nearly allied to *Scitamineæ* (q.v.), and differ chiefly in having all the stamens petal-like, and the one fertile stamen

lateral. They are of the arrow-root family, destitute of the aromatic property general in the *Scitamineæ*. There are about 160 known species, all tropical or subtropical herbaceous perennials. Not many of them are large or notable for beauty of flowers. The tuberous root-stocks of many abound in starch. MARANTA, n. *măr-ăn'tă*, genus of interesting plants, comprising greenhouse species; *Maran'ta arun'dinăcică*, also *M. indica*, are species which produce the best arrow-root.

MARASCHINO, n. *măr'ăs-kē'nō* [It. *maraschino*—from *marasca*, a cherry, F. *marasquin*]: spirit or liqueur made from the *marasca* cherry of Dalmatia: see LIQUEUR.

MARASH, *mâ-râsh'*: pashalic of Asiatic Turkey: lat. 36° 3'—33° 30' n., long. 36°—38° 40' e.; bounded n. by the pashalic of Sivas, e. by Diaubekis, s. by Aleppo, w. by Karmania; greatest length 130 m., width 105 m.; cap. Marash. The pashalic is traversed from w. to e. by the main chain of the Taurus Mountains, and drained in the e. by the Euphrates river, and the centre and s.w. by the Jyhoon. The valleys of these rivers are fertile and afford fine pasturage, but the remainder of the pashalic is mountainous and timbered. Marash, the cap, is picturesquely situated on a slope of the lofty Aghr Tagh, above the Jyhoon river, 90 m. n.w. of Aleppo, and contains 3,000–4,000 wood and clay buildings.—Pop of pashalic 248,000.

MARASMUS, n. *mă-răz'mūs* [Gr. *marasmos*, decay, weakness]: vague term formerly denoting general emaciation or atrophy with no special cause apparent; now seldom used except occasionally as a synonym for *tabes mesenterica*, or tubercular disease of the mesenteric glands: see MESENTERIC DISEASE.

MARAT, *mâ-râ*, JEAN PAUL: one of the infamous characters of the French Revolution: 1743, May 24—1793, July 13; b. Baudry, in Neufchâtel, of Prot. parentage. He practiced medicine in Paris and London; spent some time in Dublin; taught languages in Edinburgh; and, 1775, got the degree M.D. from St. Andrews on the recommendation of the Edinburgh doctors. He published works on optics, fire, electricity, and on medical subjects, some of them in English, and gained considerable scientific repute. Returning to Paris, he practiced medicine, and was in great demand among the higher classes. The Revolution brought him into political prominence. His appearance was grotesque, his look wild, and his speeches extravagant. He was unpopular in the assembly, but his influence over the lowest classes soon became great. He issued a journal, *Publiciste Parisien*, afterward called *Ami du Peuple*, which is historically connected with some of the most fearful events of that period. No falsehood was too monstrous to be published in it, no atrocity too great to be recommended. It has been generally believed that the influence of M. led to the cruelties and massacres of 1792, Sep.; this has been denied by a few writers. At this period M. was elected a member of the Convention, but his appearance

MARATEA—MARATHON.

there was met with almost universal expressions of abhorrence. No one would sit beside him; when he attempted to speak, a tumult always arose. His journal, now the *Journal de la République*, became more ferocious and sanguinary than ever. He demanded the sacrifice of 270,000 heads, and defended this in the Convention, saying that, if these were not granted, he would demand more. During the king's trial, he was urgent for his immediate execution, and in his journal called upon the people to slay 200,000 of the adherents of the old régime, and to reduce the Convention to one-fourth. In 1793, Apr., M. obtained the enactment of the fearful law against suspected persons, in virtue of which 400,000 were imprisoned. Robespierre, Danton, and M. were now the triumvirate which ruled France. M. had contracted a horrible skin disease which would soon have ended his life; but he was stabbed in his own house by Charlotte Corday (q.v.) This event was followed by some of the most horrible atrocities of the Reign of Terror; streams of blood flowing, as was said, to the manes of M., whose likeness, with gaping wounds, painted by David, was exhibited on an altar in the court of the Louvre, and then hung up in the Convention; while it was decreed that his housekeeper, whom he had married 'one fine day, in the presence of the Sun,' should be maintained at the expense of the state. A decree 1793, Nov. 4, gave to M.'s remains the honors of the Pantheon; but they were cast out of it again 1795, Nov. 8, and his picture was removed from its place in the Convention. See Bougeart's *M.*, *L'Ami du Peuple*; Chevrement's *M.* (1881).

MARATEA, *mâ-râ-tê'â*: Italian town of the province of Basilicata, on the slope of a mountain, in a lovely country. Pop. 6,480.

MARATHI, n. *ma-râth'î* [native name]: language spoken by the Mahrattas (q.v.); called also Mahratta.

MARATHON, *mă'r'a-thôn*: anciently, a village on the e. coast of Attica, about 20 m. n.e. of Athens; now called Marathona, or, according to Leake, the present Vrana. It was in the plain of M., about six m. in length and three in breadth, with a background of mountains in the w., and a marsh on the n. and s.; eastward, it reached the sea. Byron's lines in the *Isles of Greece* correctly describe it:

The mountains look on Marathon—
And Marathon looks on the sea.

M. is gloriously memorable as the scene of the grand defeat of the Persian hordes of Darius by the Greeks under Miltiades, B.C. 490. The Persians, numbering about 110,000, under the command of Datis and Artaphernes, had crossed the Ægean Sea and taken Eretria in Eubœa. Thence they crossed into Attica where, on the plain of M., they were met by the Athenian army of about 10,000 heavy-armed soldiers, reinforced by 1,000 Bœotians. The Greeks occupied the high ground in

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front of the Persians, who filled the plain toward the sea. Miltiades' plan was to attack the latter without delay. He, therefore, boldly charged down upon them. His right and left wings drove the Persians toward the sea and the marshes. But his centre was repelled. Thereupon he recalled both victorious wings and massed them against the enemy's centre, which could not withstand the combined attack. The whole Persian host was now fleeing toward the sea, where their fleet lay anchored. The Greeks followed so closely that they succeeded in burning seven of these vessels on the shore; but the rest escaped with the routed Persian army. The Persians lost 6,400 men in this battle, while the loss of the Greeks was only 192 men, whose probable burial-place is marked to the present day by a tumulus, near the modern village of Vrana, on the site of the ancient village of M. The battle was one of the great decisive conflicts in the world's history. It saved Greece from Persian rule, and Europe from Asiatic dominion and the oriental type of civilization.

MARAUD, *v.* *mă-raud'* [F. *maraud*, a rogue, a vagabond, a tom-cat—an animal notorious for its prowling habits; *marauder*, to play the rogue, to beg: Sp. *marrar*, to deviate from truth]: to rove in quest of plunder; to plunder. MARAUD'ING, *imp.*: ADJ. roving in search of plunder: N. acting as a marauder. MARAUD'ED, *pp.* MARAUD'ER, *n.* *-ér*, a freebooter; a plunderer; in *military affairs*, one who engages in irregular plunder or offers violence to the peaceable inhabitants of a country. In all armies where discipline is maintained, marauding is, at least professedly, punished by death; the provost-marshal having power to inflict that penalty summarily on all offenders taken in the act.

MARAVEDI, *n.* *măr'ă-vă'di* [Sp.]: old Spanish coin, either of vellon, worth about two-sevenths of a farthing; or of silver, worth five-sevenths of a farthing.

MARBLE.

MARBLE, n. *mâr'bl* [F. *marbre*—from L. *marmœrem*; Dut. *marmer*, marble]: calcareous stone susceptible of a high polish; anything made of marble; certain rocks susceptible of a fine polish (see below). Also a little stone ball used by boys in play, made in Saxony and exported to various countries: hard calcareous stone is broken into small cubical blocks, of which about 150 at once are thrown into a mill of revolving stone and oak slabs, which grinds, rounds, and polishes the marbles in about 15 minutes. **M.** denotes also a stone remarkable for some inscription or sculpture: **V.** to variegate or vein in imitation of marble: **ADJ.** made of marble; variegated or veined like marble; hard; insensible. **MARBLING**, imp. *mâr'bling*: **N.** the art or practice of coloring in imitation of marble. **MAR'BLD**, pp. *-bld*: **ADJ.** stained with irregular streaks or veins of color. **MAR'BLER**, **N.** *-blër*, one who veins paper-work, wood, stone, etc., in imitation of marble. **MAR'BLY**, ad. *-blë*, in the manner of marble. **MARBLE-HEARTED**, hard-hearted; cold; cruel.

MARBLE: species of stone of calcareous nature, close texture, and capable of receiving a fine polish. The genuine **M.** is more crystalline in texture than the ordinary limestone, which it otherwise closely resembles. It can be artificially formed by burning limestone sufficiently to destroy the impurities which it contains. By this process the stone becomes white, and if not overheated it retains its strength and texture. This change is often seen at lime-kilns when some of the outer blocks of stone are not sufficiently burned to form lime for commercial uses. This indicates that **M.** was formed from lime which was deprived of its coloring matter by the action of heat.

There are many kinds of **M.** varying greatly in appearance and value. By far the larger portion contains various impurities which mar its beauty and diminish its utility. **M.** was used to some extent by the ancient Egyptians, and many of the magnificent Greek and Roman structures, the admiration of succeeding ages, were of this material. In both ancient and modern times **M.** has been used in exterior and interior adornment of costly houses and fine public buildings of other materials. It has also been, and remains, the favorite material for the sculptor. The principal kinds of **M.** used by the famous Greek sculptors were the Pentelic, obtained in Attica, and the Parian, from the island of Paros. This variety was preferred by sculptors, but for building purposes the Pentelic was extensively used. The Parthenon at Athens was built of this kind of **M.** It is somewhat whiter than the Parian **M.**, but is more readily disintegrated by exposure to the elements. The Romans obtained their **M.** from Carrara in Italy, whence is secured a portion of the stone used by modern sculptors. It is remarkably free from impurities, and readily takes a very high polish. The texture is firm, but the grain is not as fine as in some other varieties.

M. is very widely distributed in both the old and the

MARBLE.

new world. It varies greatly in appearance and quality. In color it ranges from the purest white through all the intermediate shades to an intense black. The finer grades are very valuable, often selling as high as \$20 per cubic ft.; but the lower qualities are worth little if any more than ordinary limestone. The color of some varieties is due to the presence of organic matter. Much of the M. quarried near Chicago appears white when taken from the earth, but becomes discolored by exposure to the weather. The change in appearance seems to be due to the action of the air on a small proportion of petroleum which the stone contains.

In quantity the colored varieties of M. far exceed the white, but the white is much more valuable for either architectural or ornamental purposes, and is almost wholly used by sculptors. In the United States, M., both white and colored, is found in numerous localities. There are large deposits also in Canada. The three states of O. Ill., and Iowa, furnish about one half the quantity of M. quarried in this country. Large quantities are obtained in Vt., whence comes the finest quality thus far discovered in deposits of any extent in America. In Rutland there is a layer of as fine color as the Carrara M., but of slightly inferior texture: it is only three or four ft. in thickness, and is found in a bed of clouded M. 40 or 50 ft. thick. It is used for statuary. The quarries at this place furnish nearly all the M. suitable for use of sculptors that is found in the United States.

A very fine grade of black M. is found at Shoreham, Vt.; and handsomely mottled M. is found in many places. The largest quarries of colored M. are in e. Tenn.: the product is known as 'Tennessee M.,' and is extensively used for interior decoration of buildings, for furniture, etc. It is beautifully mottled and is more readily worked than most of the colored varieties found farther north.

Considerable M. is found in Colorado and Montana; and one of the most extensive deposits in the world has been discovered in California. The latter contains many different shades of colored and variegated M., and large quantities of pure white M. of very fine texture. Excellent M. for building purposes is plentiful in the w. parts of Mass. and Connecticut.

Deposits of M. vary in thickness from comparatively thin layers to 600 ft. The upper portion of the stone is usually of little value, as it has been cracked and weakened by the action of heat and moisture. Gunpowder and other explosives are not used in M. quarries, as they shatter and waste the valuable stone. Blocks are cut around with drills or chisels worked usually by steam, the center piece is removed, and the others are cut by horizontal drills which are run at the proper depth to give the block the thickness required. The subsequent cutting of the stone is done with saws of strips of soft iron driven by steam. The cutting power of these saws is greatly increased by a liberal supply of sand and water. After being sawn to the required size and

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thickness the blocks of M. are polished by rubbing with sand of varying degrees of fineness, the process being finished by the use of extremely fine emery powder. Most of this work is done with machines, but the finishing touches are by hand power.

Many thousand tons of M. are used every year in the United States in the form of dust, to generate carbonic acid gas for soda fountains, for which purpose it is one of the cheapest and best materials known. Importations of M., mostly in rough blocks, amount in value to nearly half a million dollars per year. The production in the United States for 1901 was valued at \$4,965,699.

MARBLEHEAD, *mâr-bl-hěd'*: seaport town in Essex co., Mass., on Massachusetts Bay, 16 m. n.e. of Boston, 4 m. s.e. of Salem; on a high rocky peninsula (abt. 3,700 acres) 4 m. long, 2 m. broad; terminus of short branches of the Boston and Maine r. r. It has a deep, capacious, easily accessible, and nearly land-locked harbor; and was early a place of prosperous commerce, and later was largely engaged in fisheries. Recently these interests have declined, and the shoe-manufacture has become prominent. M. is also becoming a very favorite summer resort and a rendezvous for yachts. The town was settled by emigrants from the Channel Islands, and some of their peculiar idioms and quaintness of manner are still traceable in their descendants. The place has many interesting features. It has a national bank, savings bank, newspaper, and well-conducted schools. M. has always been ardently patriotic: it sent 1,000 men to the army of the revolution, and 1,440 to the war against secession. At the close of the revolutionary war, there were 600 widows; and at the end of the war of 1812 M. had 500 citizens prisoners of war in England. A fire, 1877, which swept away most of its business portion, was a disastrous check to its prosperity. Pop. (1870) 7,703; (1880) 7,467; (1890) 8,202; (1900) 7,582.

MARBURG, *mâr'bûrch*: town, duchy of Styria, Austria; on both sides the Drave river and on the S. Austrian railway; 36 m. s.s.e. of Grätz. It is the seat of the bp. of Lavant; contains an old castle, cathedral, theatre, gymnasium, episcopal seminary, normal school, homological school, three hospitals, and the judicial and administrative offices of the district; and has a large trade in wine and grain. Employment is given to a large number of people in the railroad workshops, tanneries, cooperages, and iron and tinware factories. Excepting a successful resistance to Corvinus 1480-81, M. has had an uneventful history. It has a garrison of 1,600 men. Pop. (1880) 17,628; (1890) 19,898.

MARBURG, *mâr'bûrch*: interesting old German town, in the Prussian province of Hesse-Nassau, on both banks of the Lahn, 50 m. n. of Frankfurt-on-the-Main, 49 m. s.w. of Cassel. Its situation is strikingly beautiful; it is chiefly on a hill, round which are quaint old-fashioned houses, interspersed with buildings of later

date, and separated by terrace-gardens. The hill is crowned by the stately burg or castle, and at its base extends the lovely valley of the Lahn. Of ecclesiastical edifices, the principal is the fine church of St. Elizabeth, a gem of the purest early Gothic, begun 1255, completed 1283, having two towers 303 ft. in height. It was erected in honor of St. Elizabeth of Hungary (q.v.), daughter of Andreas II. of Hungary, and wife of Ludwig, Landgraf of Hesse and Thuringia. From her, the ancestress of the Cassel and Darmstadt branches of the House of Hesse, is descended the present Princess (Alexandra) of Wales. The castle of M. was built 1065. In one of its halls, the conferences between the Wittenberg and Swiss reformers regarding the Lord's Supper took place. The Univ. of M. was founded 1527 by Philip the Magnanimous, Landgraf of Hesse. It was the first established without Papal privileges, and soon became one of the most flourishing in Prot. Europe. Among its earliest students were the celebrated Patrick Hamilton, and William Tyndale, translator of the English Bible. The university has four faculties—Theology, Jurisprudence, Medicine, and Arts; and comprises about 40 professors, 20 lecturers, and 400 to 700 students; its library has 140,000 vols. Extensive potteries and tanneries are in operation. Pop. (1885) 12,668; (1890) 13,581.

MARC, n. *mârk* [F. *marc*]: the refuse matter of grapes or other fruit from which the juice has been expressed.

MARC, *mârck*: weight for gold or silver; coin: see MARK (standard weight).

MARCANTO'NIO: engraver: see RAIMONDI.

MARCASITE, n. *mâr'kă-sî't* [F. *marcassite*—from Ar. *mawrkjassidd* or *marqachitha*, like a shining, fire-giving stone]: white iron pyrites, occurring crystallized in modified rhombic prisms, in stalactite crusts, etc., nearly tin-white, and more strongly metallic in lustre than ordinary pyrites; used in the manufacture of sulphur and sulphuric acid, also as an ornamental stone; though opaque it is a rough substitute for diamond, because of its brilliant lustre when polished. The name M., formerly applied to all crystallized and radiated pyrites, is now restricted to those forms of native bisulphide of iron which crystallize in the orthorhombic system—called sometimes 'prismatic iron pyrites.' MARCASIT'IC, a. -*sî't'ik*, pertaining to or resembling marcasite.

MARCATO, *mâr-kâ' tō*, in Music: in a strongly accented or marked manner.

MARCELINE, n. *mâr'sêl'în*, [F.—from L. *marceo*, I am weak or thin]: a thin silk tissue used for linings, etc., in ladies' dresses.

MARCELLIAN, n. *mâr-sêl'î-an*: in *chh. hist.*, follower of Marcellus, Bp. of Ancyra, in the 4th c., who, in his zeal against Arianism, ran into Sabellianism.

MARCEL'US II. (MARCELLO CERVINI), Pope of Rome: b. in the Mark of Ancona; d. 1555, Apr. 30, having been

MARCELLUS—MARCESCENT.

pope only 21 days. As cardinal he was very prominent in the discussions of the Council of Trent, over which he was appointed to preside as legate of Julius III. whom he afterward succeeded in the pontifical chair. His feeble health gave way under the exhaustion of the conclave which elected him and the elaborate ceremonial of his accession. He had high repute for ability and integrity. He is remarkable from the minor but curious circumstance of his not complying with the ancient custom by which the pope, on his election, lays aside his baptismal name, and assumes a new one.

MARCELLUS, *mâr-sêl'ûs*, MARCUS CLAUDIUS: Roman warrior: abt. B.C. 268–208; of one of the most eminent plebeian families. He was consul for the first time B.C. 222, and obtained a decisive victory over the Insubrians in Cisalpine Gaul, slaying with his own hand their king, Britomartus or Viridomar, whose spoils he dedicated to Jupiter; for this success M. was honored with a triumph. This was the third and last occasion in Roman history on which *spolia opima* were offered to the gods. In the Second Punic War, M. fought as pretor, B.C. 216, against Hannibal at Nola, in Campania; and the victory which he gained was the more important, as it showed that Hannibal was not invincible, and that the Romans had not been irreparably overthrown at Cannæ. In the course of two years, he thrice repulsed the Carthaginian general at this place. Being consul again B.C. 214 he was intrusted with the command of the war in Sicily. He took Leontini, massacring in cold blood 2,000 Roman deserters whom he found there, and then advanced against Syracuse, which he tried to storm. All his efforts were rendered unavailing by the skill of Archimedes (q.v.), and he was compelled to regularly blockade the city. Famine, pestilence, and, ultimately, treachery, on the part of the Spanish auxiliaries of the Syracusans, enabled M. to make himself master of the place B.C. 212, after which the remainder of Sicily was soon brought under Roman dominion. He was the first Roman general who adopted the practice (afterward common) of despoiling conquered cities of their works of art. B.C. 210 he was again consul, and was again opposed to Hannibal, with whom he fought an indecisive battle at Numistro, in Lucania; and by whom he was defeated at Canusium, in Apulia, B.C. 209; but on the day following retrieved the defeat. B.C. 208, he was for the fifth time elected to the consulate, and assumed once more the command of the Roman army against Hannibal. When out reconnoitering, he fell into an ambuscade, and was slain. The Carthaginian general treated his remains with honor.—It ought to be noticed that the accounts of M.'s life given by Livy, Plutarch, and others, are believed to be much colored and distorted—as Polybius, one of the best and most trustworthy authorities on the Punic War, denies that M. ever defeated Hannibal at all.

MARCESCENT, a. *mâr-sê's-sênt* [*L. marces'cens*, or *marcescent'en*, pining away or decaying; decaying; fading;

MARCH.

in *bot.*, gradually withering, but not falling off until the part bearing it is perfected. MARCES'CIBLE, a. -*sĭ-bl*, liable to decay or fade.

MARCH, n. *mârch* [F. *marche*, march, walk; *marcher*, to walk—from mid. L. *marcārĕ*—from L. *marcus*, a hammer: Bret. *marc'h*; W. *march*, a horse: It. *marciare*, to walk]: deliberate, regular, stately walk; the journey of troops from one place to another; the movement of soldiers in order (see MARCHING OF TROOPS); slow or laborious walk; movement; progression; signal to move. Also, a piece of music fitted to accompany the movement of troops, or composed after the measure of the march of troops, chiefly for military bands, with wind instruments; there are slow and quick marches, also marches peculiar to different countries (see MARCHING OF TROOPS): V. to move in order by steps; to cause to move; to walk in a stately, deliberate manner. MARCH'ING, imp.: ADJ. pert. to a march; moving: N. military movement; passage of soldiers. MARCHED, pp. *mârcht*.

MARCH: market-town of Cambridgeshire, England, 29 m. n. from Cambridge, on the Old Nen. In the neighborhood is *March Wet Fen*, a drained fen with an area of 3,600 acres. Pop. of town (1881) 6,190.

MARCH, n. *mârch* [mid. L. *Marciŭs*; L. *Martĭus*, the month of Mars—from L. *Mars*, the god of war—*lit.*, the month belonging to Mars]: third month of the year; first month of the old Roman year, and comprising 31 days. It was considered as the first month of the year in England until the change of style 1752, and the legal year was reckoned from Mar. 25. The Anglo-Saxons called it *Hlyd monath*, stormy month, and *Hraed monath*, rugged month. There is an old proverb, still in vogue with the English and Scotch rustics, which represents M. as borrowing three days from April; and in *The Complaynt of Scotland* they are thus described:

The first it shall be wind and weet;
The next it shall be snaw and sleet;
The third it shall be sic a freeze
Shall gar the birds stick to the trees.

But it is disputed whether these 'borrowed days' are the last three of March or the first three of April. MARCH-MAD, rash to an extreme—in allusion to March being the rutting time of hares, when they are very excitable.

MARCH, FRANCIS ANDREW, LL.D., L.H.D.: author: b. Milbury, Mass., 1825, Oct. 25. He graduated at Amherst 1845; was tutor there 1847-49; was admitted to the bar in New York 1850; taught in Fredericksburg, Va., 1852-55; and became tutor in Lafayette College 1855, adjunct professor 1856, prof. of English language and comparative philology 1857, and lecturer in the law dept. 1877. He received the degree LL.D. from the College of N. J. 1870, and Amherst 1871, and L.H.D. from Columbia 1887; was elected pres. of the American Philological Assoc. 1873, and of the Spelling Reform

MARCHAND—MARCHING OF TROOPS.

Assoc. 1876; is vice-pres. of the London Shakespeare Soc.; and has had charge of the American work on the historical dictionary of the English language, pub. under the auspices of the Univ. of Oxford. He ranks as an authority in his department of study. Besides contributions to American and foreign reviews and educational publications, he has published *A Method of Philological Study of the English Language* (New York, 1865); *Parser and Analyzer for Beginners* (1869); *Anglo-Saxon Grammar* (1870); *Introduction to Anglo-Saxon* (1871), etc.

MARCHAND, JEAN BAPTISTE: a French soldier; b. 1863; entered the army 1883; served on an expedition to the sources of the Niger 1890; conducted a secret expedition 1896-98 to occupy the Upper Nile region and captured Fashoda. A controversy between Great Britain and France resulted, but was settled by compromise, France giving up her territorial claims on the Nile, and receiving the right to use that river as a commercial highway, also permission to extend her sphere of influence in Central Sudan.

MARCHAND, *mâr-shǒng'*, JOHN BONNETT: 1808, Aug. 27—1875, Apr. 13; b. Greensborough, Penn.: naval officer. He entered the U. S. navy as midshipman 1828; was promoted passed midshipman 1834, lieut. 1840, commander 1855, capt. 1862, and commodore 1866; and was retired 1870. He participated in the Seminole Indian war 1841-2; bombardment of Vera Cruz and capture of Tuspan 1847; Paraguay expedition 1859-60; capture of Fernandina 1862; and battle of Mobile Bay, where he twice rammed the Confederate iron-clad *Tennessee*, 1864, Aug. 5.

MARCHANTIA, *mâr-kǎn'shĭ-a* or *mâr-chǎn'tĭ-a*: genus of *Hepaticæ* (q.v.), type of a sub-ord. distinguished by the spore-cases bursting irregularly, and the spores being mixed with elaters.

MARCHES, n. plu. *mârch'ěz* [F. *marche*, a military frontier, a march: AS. *mearc*, a mark; Goth. *marka*, a border: comp. Gael. *marc*, a horse; *marcaich*, to ride]: borders of a country not separated by natural boundaries of rivers or mountains; frontiers. THE MARCHES, term formerly applied to the boundaries or the border territories between England and Scotland, also between England and Wales (see MARK): in Scotch law, the boundaries of properties. THE MARCHES in *Italy*, a central region of the kingdom, comprising the provinces Ancona, Ascoli-Piceno, Mascarata, Pisaro, Urbino; 3,751 sq.m.; pop. 966,533; chief city, Ancona on the Adriatic Sea (see the titles of the above provinces). MARCH, v. *mârch*, in *Scot.*, to join, as a frontier; to border. MARCH'ING, imp. MARCHED, pp. *mârch't*. MARCH'ER, n. -*ér*, the officer who defends the borders of a country. RIDING THE MARCHES, an ancient annual ceremony of perambulating the boundaries of a burgh or township in Scotland.

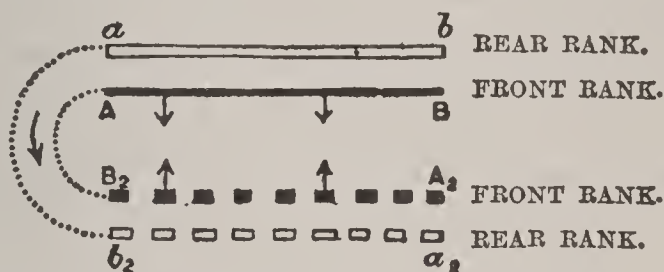
MARCHING OF TROOPS: one of the first necessities to distinguish a body of disciplined soldiers from a mere crowd of men. It is a regular cadenced step, taken by every individual at the same time, and with the foot on

MARCHIONESS—MARCIANISI.

the same side. The ancient Roman legions had military music to beat time for their march. In the feudal ages, when infantry fell into disrepute, cadenced M. was unattended to, and seems to have been thoroughly revived first by Marshal Saxe. The best music for M. is found to be some simple tune readily performed by drums and fifes. The music, besides preserving the time, acts as a preventive of fatigue.

The slow march, used in some armies only on parade, is of 75 paces, each of 30 inches, in a minute; the quick march, of 120 paces, is that in which evolutions are performed; and the double-quick is of 165 running paces, with the knees raised high. The double-quick cannot be sustained for any great distance, and is employed in a charge, or in suddenly occupying a hill or some commanding position, and in a few short internal movements of regiments.

Countermarching is an evolution by which a body of men change front, and at the same time retain the same men in the front rank. The operation for a company is shown in the annexed diagram, where the solid line rep-



Countermarching:

AB, *ab*, original position; A₂B₂, *a₂b₂*, the new position. The arrows denote the direction in which the ranks face.

resents the first position, and the broken line the position afterward taken, the movement being represented by 'right turn, quick march, left wheel, forward, halt, front, dress.' On the same principle, a whole army will sometimes change front. If after the countermarch the order 'rear-turn' be given, the same front will be preserved, with the rear-rank in front, and what was previously the right now serving as the left. A rear-rank may also become a front-rank by merely countermarching round the end of the latter, which remains stationary.

MARCHIONESS, n. fem. *mâr'shôn-ës* [It. *marchesa*; mid. L. *marchionis'sa*, a marchioness]: the wife of a marquis or marquess; a lady having the rank of a marquess.

MARCHPANE, n. *mârç'h pân* [F. *massepain*; OF. *marcepain*, a bread-lump—from It. *marzapane*, a confection of flour, almonds, and sugar, etc.: L. *massa*, a lump; *panis*, bread]: in *OE.*, a cooked compound of flour, various fruits, and sugar, made into fancy shapes; a seed-cake or a bun; a pasty.

MARCIANISI, *mâr-châ-nēsē*: town of the Italian province of Caserta (Terra di Lavoro), 13 m. n. of Naples, in a low unhealthy plain, among several lakes. Pop.

MARCIANIST—MARCION.

MARCIANIST, n. *mâr'shĭ-an-ĭst*: in *chh. hist.*, follower of a certain Marcianus Trapezita in the time of Justinian. They kept the Jewish Sabbath as a fast. They must not be confounded with the Marcionists.

MARCION, *mâr'shĭ-on*: founder of the Marcionites, an extremely ascetic sect, ordinarily, though with doubtful correctness, ranked among the Gnostics, with whose system some of their doctrines agreed. He is heard of first at Rome, soon after A.D. 139. (The tradition that he was son of the Bp. of Sinope lacks verification.) He was b. at Sinope, and was a ship-owner: he died probably not long after 165. At Rome he advanced some of his peculiar doctrines, and made efforts to commend them to the local church, to which also he gave money liberally; but his restless, prying, theorizing intellect constantly led him into opinions and practices too hostile to those of his fellow-Christians to permit of their being passed over in silence. He met at Rome the Syrian Gnostic Cerdon, whose system he took as a basis for a dualistic—and so far Gnostic—system of his own, in some fundamental respects, antagonistic to Christianity. The gospel of Christ, according to him, consisted in the free love of the Good; the Mosaic system, with its motives of rewards and punishments, was mere legality; and there is an irreconcilable opposition between the respective authors of the 'Law' in the Old Testament and of the 'Gospel' in the New, i.e., between the wrathful and sternly just creator of man, and the God who was in Christ. His system is not perfectly known; and it is supposed by some to have assumed three or four aboriginal beings—Good, Evil, Creator, and Matter; but probably his followers generally held to the dual original beings—a good God, and one not good: see Gnostics. He proclaimed extreme asceticism; forbade all amusements, ornaments, social elegancies, and refinement; prohibited the use of wine and of flesh; denounced marriage; and all this on the basis of that dualism which he held in common with the Gnostics, which identified all matter with evil—the work of a creator opposed to the good God. His speculations were amazingly grotesque misapplications and misunderstandings of the apostle Paul's profound and spiritual antithesis between the law as given by Moses and the free grace of God as developed and manifested in Jesus Christ. To antagonize the Judaizing elements in the Catholic Church, he took as his mission. Respecting the outward form of worship practiced among his followers, little is known save that it had great similarity—as had their whole religious system—to that of the Manicheans (q.v.): indeed the Marcionites may be regarded almost as the Manicheans of the 2d c. M. entirely rejected the Old Testament as an evil work; and of the New Testament, all but the Epistles of Paul, whom he deemed Christ's only true apostle, and the Gospel of Luke, which had also to undergo purification of its errors at his hand. Its first four chapters were omitted, and the fifth he began with the words: 'In the 15th year

MARCONI—MARCY.

of the reign of Tiberius Cæsar, God came to Capernaum, a city of Galilee, and spoke on the Sabbath.' M. gained multitudes of followers throughout Syria, Egypt, Palestine, and other lands. He made Rome his abode, but journeyed in various countries seeking to gain followers, and hoping to supplant the Catholic Church with Marcionite churches. We read of many Marcionite presbyters and bishops. The greatest success of the strange system was in 150-250; due, as has been pointed out, to the fact that, with most abhorrent errors, 'the sect maintained certain genuine Christian ideas which the Catholic Church had forgotten.' Under Constantine and his successors they were persecuted. In the West with the beginning of the 4th c. they began to be merged in the Manicheans; in the East they subsisted as a distinct party till the 6th c.

MARCONI, *mâr-kō'nē*, WILLIAM: electrician; b. near Bologna, Italy, 1874; was educated at Bologna University; took up the study of electricity at the age of 14; began experimenting in wireless telegraphy in 1895 on his father's estate and transmitted messages over distances exceeding a mile. In 1896 he made experiments in England with Prof. W. H. Preece, sending messages between Penarth and Weston. On 1898, Jan. 1, he succeeded in signalling from the Isle of Wight to the mainland; came to the United States to induce the government to buy his system, but found that another system had been adopted; transmitted two distinct messages by means of one aerial wire at the same time, 1900; reported the races for the America's Cup, 1901; announced, 1901, Dec. 14, that he had received at his station in Newfoundland wireless signals from his station in Cornwall, England; and 1902 set up a station at Glace Bay, N. S., and sent messages to King Edward and the King of Italy. He was knighted by the King of Italy, 1897. See WIRELESS TELEGRAPHY.

MARCO POLO'S SHEEP, n. *mâr'kō pō'lōz*: *Ovis poli*, one of the finest species of the genus. It inhabits the high lands of the Thian Shan Mountains, n. of Cashgar and Yarkand. In winter this sheep is grayish brown, white below, with white mane, and white disk on tail: in summer the gray changes to brown. There is a well-defined dark dorsal line. The horns are spiral, and sometimes measure as much as 4½ feet from tip to tip.

MARCOSIAN, n. *mâr-kō'zī-an*: in *chh. hist.*, follower of Marcus, an Egyptian Judaizing Christian of the 2nd c. The sect possessed a number of apocryphal books, and their opinions seem to have resembled those of the Socinians.

MAR'CUS AURE'LIUS: see ANTONINUS.

MARCY, *mâr'sī*, MOUNT: one of the higher Adirondacks, in Keene, Essex co., N. Y.; 5,467 ft. high. It is called sometimes by its Indian name, *Tahawas*, 'cloud-divider.'

MARCY.

MARCY, *mâr'sĩ*, RANDOLPH BARNES: 1812, Apr. 9—1887, Nov. 22; b. Greenwich, Mass.: soldier. He graduated at the U. S. Milit. Acad. 1832; took part in the Black Hawk expedition the same year; was promoted 1st lieut. 1837, and capt. for gallantry at Palo Alto and Resaca de la Palma, 1846; engaged in exploration of the Red River country 1852–54, the Seminole Indian war 1857, and the Utah expedition 1857–58; became paymaster and maj. 1859, inspector-gen. and col. U. S. A., and brig.gen. vols. 1861, and chief of staff to his son-in-law, Gen. McClellan, till 1862, Nov.; and was appointed inspector-gen. of the milit. div. of the Missouri, 1865, and inspector-gen. U. S. A. 1878. He was brevetted brig.gen. and maj.gen. for services during the war 1865, and retired 1881. M. published many magazine articles and *Exploration of the Red River in 1852* (1853); *The Prairie Traveller: a Handbook for Overland Emigrants* (1859); *Thirty Years of Army Life on the Border* (1866); and *Border Reminiscences* (1871).

MARCY, *mâr'sĩ*, WILLIAM LEARNED: 1786, Dec. 12—1857, July 4; b. Southbridge, Mass. He graduated at Brown Univ. 1808; taught school; then studied law at Troy, N. Y., and, after admission to the bar, opened an office there. During the war of 1812 he served as lieut. of volunteers, and was sent with his command to the n. frontier, where, 1812, Oct. 23, he captured the Canadian forces at St. Regis. This exploit gained the recognition of Gen. Dearborn, and enabled him to retire after the expiration of the term of his enlistment, with the rank of capt. In 1816, he was appointed recorder of Troy, but was removed because politically opposed to De Witt Clinton. Thereupon he became editor of the *Troy Budget*, anti-federalist daily. In 1821, he was made adjt.gen. of the state militia; 1823, he became comptroller of the state; and 1829, was appointed one of the associate judges of the N. Y. supreme court. In 1831, the democratic party lected him to the U. S. senate, which office he filled so acceptably that, 1833, he was made gov. of the state, and was twice re-elected, but was defeated by William H. Seward when candidate for a fourth time, 1839. 1839–42, he served under Van Buren as one of the commissioners on the Mexican claims; 1843, he was active in carrying N. Y. for Polk, by whom he afterward was made sec. of war, which office he filled with much ability through the trying times of the Mexican war. He was active also in settling the Oregon boundary question, advocated the tariff of 1846, and opposed all interference on the slavery question. At the close of his term he retired to private life; but, 1853, was made sec. of state by Pres. Pierce, holding that office till 1857. His correspondence with Austria relative to the release of the Hungarian Koszta, taken from Austrian custody by Capt. Ingraham of the U. S. navy; his papers on Central American affairs, Danish sound dues, and like topics, proved his diplomatic and statesmanlike ability. At the close of Pres.

MARDI GRAS—MARE.

Pierce's term he again retired to private life, and four months later died suddenly in his study at Ballston Spa, N. Y.

MARDI GRAS, *mâr-dē graw* [F. fat Tuesday]: see **SHROVETIDE**; the day before Ash Wednesday (q.v.). From very early times in Europe the day was given to carnival and merry-making, and still is in the southern Rom. Cath. countries. The custom with its masked parades and street pageants was probably introduced from France into the larger cities of the southern United States early in the 19th c., though it was not till 1837 that it became an institution. The day is celebrated with most splendor in New Orleans, La. There it is a legal holiday; from 2 P.M. the streets are filled with masqueraders. A leading feature is the procession of masked butchers following the gayly garlanded fat ox (*bœuf gras*); to which is added, since 1872, the procession of 'Rex,' or the King of the Carnival, after his arrival has been heralded for days in the newspapers. He begins his march at noon, in the person of a gray-bearded man, preceded by pages bearing his sceptre and keys, and escorted by courtiers and guards in every style of dress. Since 1857 the night parade of the secret order of 'The Mystick Krewe of Comus' is held with gorgeous display, usually illustrating by a series of tableaux, on large floats mounted on wheels, some poem, like *Lalla Rookh*, or some event in history—every year something new. The similar displays of the 'Twelfth Night Revellers' since 1870 rival those of the 'Mystick Krewe.' The day closes with a grand masquerade ball in the opera house in the evening, where 'Rex' chooses a 'Queen,' whose coronation with extravagant pomp is the culmination of the revels of the day and season.

MARDIN, *mâr-dēn'*: town of Asiatic Turkey, picturesquely situated, 3,900 ft. above sea-level, on the s. slopes of the Mardin Hills (anciently Mt. Masius), 57 m. s.e. of Diarbekir. It contains numerous mosques, bazaars, and baths, and the ruins of a famous old castle, which from the time of the Romans was important in history. The ornaments in Arabesque on the gates of the citadel are said to be finer than those of the Alhambra. Of the people, half are Moslem Kurds; the other half Chaldeans, Maronites, and Jacobites (q.v.). They carry on manufactures of linen and cotton fabrics, and of leather. During the decline of the caliphate of Bagdad, M. rose to importance, and was long the cap. of a principality under a branch of the Ayubites (descendants of Salah-ed-din), but its short-lived glory was soon quenched by the advancing tide of the Mongols. It was subsequently taken by Timûr. Pop. 15,000 to 18,000.

MARE, n. *mâr* [AS. *mære*; Icel. *mer*; Ger. *mähre*; Dut. *merrie*, a mare: Icel. *mar*; W. *march*, a horse]: the female of the horse; one of the movable supports of a scaffold, somewhat of the size and shape of a horse; a mason's lime-trough. **MARE'S-NEST**, some fancied discovery which

turns out to be something very absurd or ludicrous, or a hoax. MARE'S-TAIL, a common marsh-plant; the *Hippuris vulgāris*, ord. *Hal'oragĕācĕw*.

MARÉCHAL, n. *mâr'ā-shāl* [F. *maréchal*, properly one who shoes and takes care of horses—from mid. L. *mar-iscāl'cus*]: originally an officer set over the horses and stables of the king; the highest military title in the French army.

MAREE, LOCH, *loĕh mâ-rĕ'*: lake in the w. of Ross-shire, Scotland; 12 $\frac{3}{4}$ m. in length, with breadth of from 3 furlongs to 2 $\frac{1}{4}$ m., and depth, in some places, of 60 fathoms. Owing to its depth, it never freezes over its whole extent. It is surrounded by mountain scenery which, for wildness and grandeur, is not excelled in Scotland. Its waters flow to the sea by the river Ewe, two m. in length. The loch contains 27 islets, one with remains of an ancient chapel and a graveyard.

MARE ISLAND: island of Cal., off the bay of San Pablo; the site of a U. S. navy-yard, with a floating dock and an arsenal.

MAREMMA, n. *mă-rĕm'ma*, plu. MAREMME [It. *maremma*, corrupted from *marittima*, country by the sea-shore—from *mărĕ*, the sea]: vast marshy region of w. Italy, extending along the sea-coast of Tuscany, from the mouth of the Cecina to Orbitello, 997 sq. m. The Pontine Marshes and the Campagna of Rome are similar districts. Formerly, these Maremme were fruitful and populous plains; but neglect of the water-courses of the district allowed the formation of marshes; and now they have become generators of tertiary fevers, and present an aspect of dreary desolation in the summer months, when the inhabitants flee from their miasmata, injurious alike to man and beast. Leopold II., the late Grand Duke of Tuscany, directed especial attention to the drainage and amelioration of the Tuscan Maremme, and considerable success attended the effort to plant trees in them as a corrective of their malarious effects. The cost of the drainage of the M., 1828-48, was \$2,650,000. The arable land in the vicinity of the M. is exuberantly fertile; but the harvests are gathered by hired laborers in the most infected districts, and in their emaciated and livid features may be seen the fatal action of malaria. During winter, the M. is inhabitable, and yields good pasture.

MARENGO, *mă-rĕn'gō*: village of n. Italy, province of Alessandria, near the Bormida, in the midst of extensive forests. M. was the scene of a memorable battle, in which a French army of somewhat more than 20,000, commanded by Bonaparte, defeated and routed 32,000 Austrians, under Gen. Melas, 1800, June 14.

MAREOTIS, *măr-ĕ-ō'tis*, or MAREIA, LAKE: the modern *Birket-el-Mariûlt*, a salt lake or marsh in n. Egypt, extending s. from the city of Alexandria, and separated on its n.w. side from the Mediterranean by a narrow

MARESCHAL—MARGARET.

isthmus of sand. In ancient times, this marshy lake was about 42 m. long, and about 22 m. wide. Its shores were planted with olives and vines, and the papyrus, which grew upon its banks and on its eight islets, was famous for its fine quality. In more recent times, the canals which fed Lake M. were neglected, and its depth and area were much reduced. In the 18th c., the bed had become, in great part, a sandy waste; but 1801, during the war between the English and French, the sea was let in by the English, and it is now again a marshy lake. The passage by which the sea found entrance was subsequently closed by Mehemed Ali. The present dimensions of the lake are about 27 m. long by 25 m. broad.

MARESCHAL, n. *mâr'shāl* [F. *maréchal*; OF. *mare-schal*]; a military officer of the highest rank—now usually written MARSHAL: see MARÉCHAL: in *Scot.*, formerly MARISCHAL, n. *mâr'shāl*, as the *Earl Marischal*.

MARGARET, *mâr'ga-rèt*, called sometimes the 'Northern Semiramis,' Queen of the triple Scandinavian kingdom of Denmark, Norway, and Sweden: 1353–1412 (reigned 1387–97, also regent 1380–87, and practically regent 1397–1412); second daughter of Valdemar III., King of Denmark; she became wife of Hakon VIII., King of Norway. At the death of her father, without direct male heirs, 1375, the Danish nobles, passing over the son of Valdemar's eldest daughter, Ingeborg of Mecklenburg, offered the crown to M. and her husband, in trust for their infant son Olaf. By the death of Hakon, 1380, M. became sole guardian of the young prince, who died 1387, at the age of 17; and such was the discretion with which she had conducted the government during her sole regency, that the estates of both kingdoms concurred in electing her as their joint sovereign ruler. Having received the crown at their hands, she convoked a *landthing*, in which she announced that, with the concurrence of her subjects, she would nominate her grandnephew, Eric of Pomerania, as her successor; and though, owing to Eric's infancy at the time, and his subsequent incapacity, the real power rested in the hands of M., she contented herself from that time with the title of 'Margaret, by the grace of God, daughter of Valdemar, King of Denmark.' At the moment that M. was cementing the union of Norway and Denmark, the condition of affairs in Sweden opened the way for a further extension of her power; for the Swedish king, Albert of Mecklenburg, had so thoroughly alienated the affections of his subjects, that the nobles, declaring the throne vacant, offered to acknowledge M. as their ruler. The queen lost no time in sending an army into Sweden to support her pretensions, and defeated the king's German troops at Leaby, where Albert and his son Eric fell into her hands. Albert remained in prison seven years, during which time M. succeeded in wholly subjugating Sweden; and 1397 she made her triumphal entry into Stockholm, with

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her nephew Eric, who shortly afterward was, in his 16th year, crowned king of the three Scandinavian kingdoms. On this occasion, M. brought forward the memorable Act of Union, which she had drawn up with her own hand, and to which were appended the signatures of 17 of the principal men in the three kingdoms. By this remarkable act, known as the Union of Calmar, from the place at which it was signed and first promulgated, it was stipulated that the three kingdoms should remain forever at peace under one king, retaining their own laws and customs; and that, at the death of the sovereign, if he left several sons, one of their number should be chosen by the combined estates of the three realms, who were also to elect a new king in the event of the deceased monarch having died childless. At the death of M., this utopian scheme utterly broke down.

MAR'GARET (properly MARGUERITE MARIE THÉRESE JEANNE DE SAVOIE), Queen of Italy: b. Turin, 1851, Nov. 20; daughter of Duke Ferdinand of Genoa and Princess Elizabeth of Saxony. She received a most careful education, made a special study of Italian history, and has so endeared herself to her people that they speak of her as 'the Star of Italy.' She was married to her cousin Humbert, Crown Prince of Italy, 1868, Apr. 20; resided with him at Naples (where their only child, Victor Emmanuel, Prince of Naples, was born 1869, Nov. 11) till Rome became the cap. of united Italy 1871; and ascended the throne with him on the death of his father 1878, Jan. 9. She has been active in promoting the industrial, educational, and charitable interests of the kingdom, and to her is due the revival of the apparently lost art of Burano lace-making.

MARGARET OF ANGOULEME: see MARGUERITE DE VALOIS.

MAR'GARET OF ANJOU, *ōng-zhō'*: the Queen of Henry VI. of England: 1429, Mar. 24—1482, Aug. 25; b. Pont-à-Mousson, Lorraine; daughter of René of Anjou, Count of Guise and titular king of Sicily, and of Isabella of Lorraine. She was married to Henry VI. of England 1445; and her husband being a person of very weak character, she exercised almost unlimited authority over him, and was the virtual sovereign of the realm; but a secret contract at her marriage, by which Maine and Anjou were relinquished to the French, excited great dissatisfaction in England. The strife between the English and French, which lost to the former the whole of their possessions in France except Calais, was charged upon Margaret. In 1450 occurred the insurrection of Jack Cade, and soon afterward the country was plunged into the horrors of that bloody civil war known as the *War of the Roses* (q.v.). After a struggle of nearly 20 years, M. was defeated and taken prisoner at Tewkesbury, and imprisoned in the Tower, where she remained five years, till Louis XI. redeemed her for 50,000 crowns. She then retired to France, and died at the chateau of Dampierre, near Saumur, in Anjou.

MARGARET—MARGARIC.

MAR'GARET OF AUSTRIA, Duchess of Savoy, and Regent of the Netherlands: 1480, Jan. 10—1530 (regent 1507-30); b. Brussels: daughter of Emperor Maximilian and Mary of Burgundy. When two years old she was betrothed by treaty to the dauphin of France, afterward Charles VIII., but the contract was never carried out; when 15 years old she was similarly betrothed to the infante John of Aragon, heir to the Spanish throne, who married her two years afterward, and left her a widow within a year; and 1501 she married Philibert II. of Savoy, who died 1504. In 1506 her father appointed her regent of the Netherlands, and charged her with the care and education of his grandson, the future Charles V. of Germany, and his sister Mary. She ruled with great wisdom; conducted the political affairs of the kingdom with firmness and discretion; and rendered the country lasting service by stimulating its material development and progress. She was a plenipotentiary at Cambrai, 1508; made a treaty with Cardinal Amboise; induced the king of England to join the alliance against France 1515; and with Louisa of Savoy, mother of the king of France, negotiated the 'ladies' peace' between Francis I. and Charles V. 1529.

MAR'GARET OF AUSTRIA, Duchess of Parma, and Regent of the Netherlands: 1522-86 (regent 1559-67); b. Brussels: natural daughter of Charles V. by Margaret van Gheenst, a Flemish lady. She was educated at the court of the queen-dowager of Hungary; married first Alessandro, Duke of Florence (1536), who was assassinated within a year, and then Ottavio Farnese, Duke of Parma and Piacenza (1542), by whom she became mother of the celebrated soldier, Alexander Farnese. She was appointed regent of the Netherlands by her brother Philip II. of Spain on his departure for the peninsula, 1559, holding the office 8 years. She was exceedingly masculine in appearance, cultivated a mustache, delighted to dress in man's costume, and rode on horseback man-fashion. Her rule was troublesome and unsatisfactory to herself as well as to the Dutch; yet she resigned power to the Duke of Alva 1567 with great reluctance. She retired to Italy with a large pension from the king, and lived to see her son appointed to the govt. that she had formerly held.

MAR'GARET, SAINT: the queen of Malcolm Canmore (q.v.).

MARGARIC, a. *mār-gār'ik* [L. *margarītā*; Gr. *margarītēs*, a pearl]: pertaining to pearls, or the pearl-like substance called *margarine*; applied to an important and widely distributed fatty acid. MARGARIC ACID ($C_{17}H_{34}O_2$), one of the solid fatty acids. At an ordinary temperature, it is solid, white, and crystalline; it is perfectly insoluble in water, dissolves in boiling alcohol, from which it separates in glistening groups of very delicate needles, and is readily soluble in ether. It unites with bases, forming margarates, and in combination with

MARGARITA—MARGIN.

Glycerine (q.v.) forms the glyceride or fat known as *margarine*. This acid occurs either in a free state or in combination with alkalis in most of the animal fluids, with the exception of urine, and as a glyceride it is widely diffused in the animal and vegetable fats. Heintz maintains that this acid is merely a mixture of about ten parts of Palmitic Acid (q.v.) with one part of Stearic Acid (q.v.). MARGARATE, n. *mâr'gă-răt*, a compound of margaric acid with a base. MARGARINE, n. *mâr'gă-rîn*, the pearly solid portion of oils and fats, e.g., human fat, goose grease, olive-oil, etc., and obtained from them when exposed to cold (see OLEO-MARGARINE). MAR'GARITE, n. *-rît*, one of the mica family—called also *pearl mica*, *corundellite*, and *clingmanite*, a pearly-gray mineral. MARGARONE, n. *mâr'gă-rôn*, a solid white fatty matter obtained from *margaric acid*.

MARGARITA, *mâr-ga-rê'ta*: island discovered by Columbus 1498: about 8 m. off the coast of Venezuela, in the Caribbean Sea, and with the smaller islands Blanquilla and Hermanos, forming the old state of Guzman Blanco, belonging to Venezuela. M. has 380 sq. m. M. was long famous for its pearl-fisheries.—Pop. of M. (1807) abt. 16,000, one-half white; of the state, 40,000.

MARGARITA, SANTA: town of Sicily, 42 m. n.w. of Girgenti. Pop. 7,000.

MARGATE, *mâr'gât*: municipal borough, seaport, and famous watering-place of England, in the Isle of Thanet, Kent, about 70 m. e.s.e. of London (90 m. by rail). All the usual resources of a watering-place—theatre, baths, libraries, assembly-room, etc.—are found here; and a fine pier, 900 ft. long, is the principal promenade. The shore, covered with a fine and firm sand, is well adapted for sea-bathing. Fishing is carried on to a considerable extent. A deaf and dumb asylum was opened 1875. A fluctuating population of between 50,000 and 100,000, largely from the middle classes of London, is poured into the town during the season. Pop. (1891) 18,226

MARGAY, *mâr'gă* (*Felis tigrina*): species of cat or tiger-cat; native of the forests of Brazil and Guiana; of about the size of the wild cat of Europe; of pale fawn color, with black bands on the fore-parts, and leopard-like spots on the hind-parts, and on the rather long thick bushy tail. It is capable of complete domestication, and of being made very useful in rat-killing.

MARGE, n. *mârj* [F. *marge* (see MARGIN)]: in OE., brink; edge; verge; margin.

MARGENT, n. *mâr'jënt*: in OE., same as MARGIN, which see.

MARGIN, n. *mâr'jîn* [L. *margo* or *marginem*, brink, border: It. *marginè*: F. *marge*]: the border, brink, edge, or verge of anything; the blank edge of a leaf or page; what is written or printed, on the margin; the difference between the price of purchase and sale of an article, out of which the merchant or trader derives his profit; something left

MARGINAL CREDIT.

or provided for meeting casualties; in *bot.*, the boundary-line or contour of a body traced by the union of opposite plane surfaces; latitude, as, this must be taken with a wide *margin*: V. to furnish with a margin; to enter in the margin of a page. MAR'GINING, imp. MAR'GINED, pp. *-jind*. MAR'GINAL, a. *jìn-ăl* [F.—L.]: pert. to or placed in the margin; placed upon or attached to the edge of anything. MAR'GINALLY, ad. *-lî*. MAR'GINATE, a. *-jîn-ât*, or MAR'GINATED, a. *-â-těd*, having a prominent and well-defined margin. SYN. of 'margin, n.': brim; rim; latitude.

MARGINAL CREDIT: business operation, in which a banker lends the credit of his name to his customers, thus enabling them to carry out important commercial transactions. A merchant in this country, for instance, desires to import tea or silk, but his name is not so well known on the Chinese Exchanges that bills drawn upon him by a merchant in China can be sold there at a reasonable rate of exchange. The tea or silk cannot be bought without the money being on the spot to buy it with, and if he sends out specie for that purpose he involves himself in heavy charges for freight and insurance, and loses the interest of his money while on the voyage. Before it arrives, the prices of tea and silk may have been so altered in the market that he would not be inclined to buy, and his money would thus be placed where it is not wanted. But while drafts by the merchant in China on the merchant in this country would not sell, or would sell only at a heavy sacrifice, the drafts by the merchant in China on a banker in this country will sell at the best price. The merchant in this country therefore deposits with his banker cash or securities equal to the amount to which he desires to use the banker's name, and receives from him *Marginal Credits* for the amount. These are bill-forms drawn upon the banker, but neither dated nor signed, with a margin containing an obligation by him to accept the bills when presented. The bills are dated, drawn, and indorsed by the merchant in China before being sold, so that the obligation runs from the date on which the money was actually paid, and the tea or silk is likely to be in the merchant's warehouse before the bill is payable. For the transaction the banker charges the merchant a commission to remunerate himself for the risk.

Many other transactions of various forms between merchants abroad and in this country are intrinsically the same as when Marginal Credits are used. Bankers accept bills to a great amount for the exchange operations of foreign banks. A banker in, say Canton, buys from his customers bills drawn upon merchants in this country for a given amount, and sends them to his correspondent here, who holds them for him and grants a credit in his favor on the security of them. The Canton banker operates upon this credit by drawing upon the banker here, and sells his drafts at the most favorable exchange: with the money received he purchases other bills, and remits them also, to be again drawn against.

MARGRAVE—MARIA CHRISTINA.

When these operations are made with caution and sound judgment, they are beneficial to all concerned; but when engaged in without sufficient knowledge or recklessly, they involve disastrous consequences.

MARGINALIA, n. plu. *mâr-jîn-a'tî-a*: notes written on the margins of books.

MARGRAVE, n. *mâr-grāv* [F. *margrave*—from Ger. *markgraf*, count of the *march*—from *mark*, boundary; *graf*, count]: German title of nobility (see MARQUIS). MAR'-GRAVINE, n. fem. *-rên*, the wife of a margrave.

MARGUERITE DE VALOIS, *mâr-grêt' dêh vâl-wâ'* (in her youth known as MARGUERITE D'ANGOULÊME, which indeed is strictly her proper designation): 1492, Apr. 12—1549, Dec. 21; b. Angoulême; dau. of Charles d'Orleans, Comte d'Angoulême, and sister of Francis I. of France. She received a brilliant, and even profound education, but was characterized by the most charming vivacity. In 1509, she was married to Charles, Duke of Alençon (whence she is called sometimes M. d'Alençon), who died 1525. In 1527, she was married to Henry d'Albret, King of Navarre (whence she is called sometimes M. de Navarre), to whom she bore a daughter, Jeanne d'Albret, mother of the great French monarch, Henri IV. She encouraged agriculture, the arts, and learning, and to a certain extent favored the Reformation. Later, she found it necessary to be prudent, and even to return in some degree to the practices of the Rom. Cath. Church. But she never ceased to act with a courageous generosity towards the Reformers, who always found an asylum and welcome in Navarre. She seems to have been inclined more to a mystic pietism than to dogmatic Protestantism. She was a zealous patroness of learning, and had great strength of mind and amiability of character. She wrote a little religious work, *Miroir de l'âme pécheresse*, which was condemned by the Sorbonne, as favoring Prot. doctrines. She wrote also poems and tales, and a *Heptaméron des Nouvelles* (Par. 1559), modelled on the *Decameron* of Boccaccio.—Another MARGUERITE (1553-1615), properly called M. de Valois, was great-niece of M. d'Angoulême, being daughter of Henry II. by Catharine de' Medici. She became wife of Henry II., and was famous for beauty, learning, and looseness of conduct.

MARIA CHRISTINA, *mâ-rê'a krîs-tě'na*, Queen of Spain: 1806, Apr. 27—1878, Aug. (regent 1833-40): daughter of Francis I., King of the Two Sicilies. In 1829, she became fourth wife of Ferdinand VII. of Spain; who, 1830, restored the law by which, in default of male issue, the right of inheritance was given to females, and in Oct. of that year the queen gave birth to a daughter, Isabella II., ex-queen of Spain. The Spanish liberals gladly embraced the cause of the queen, rejoicing to see the dreaded Don Carlos, Ferdinand's brother, further removed from probable succession to the throne. Ferdinand died, 1833, Sep. 29, and by his testament his

MARIA LOUISA.

widow was appointed guardian of her children—the young Queen Isabella, and the Infanta Maria Louisa, now Duchess de Montpensier—and regent, till the young queen should attain the age of 18 years. A civil war broke out, the adherents of Don Carlos seeking to place him on the throne. The event of this war, which continued till 1840, was long doubtful, and Spain was fearfully desolated by contending armies; but the queen-mother seemed indifferent to everything except the company of Don Fernando Muñoz, one of the royal body-guard, whom she made her chamberlain, and with whom she was united, 1833, Dec., in a morganatic marriage, which was kept secret, while her connection with him was no secret. She had ten children by him. A conspiracy, which broke out, 1836, Aug. 13, exposed Muñoz to great danger, and led the queen-mother to concede a constitution to Spain. Her practice as regent was to adopt the course agreeable to the minister of the day, and thus her government was despotic under one ministry and liberal under another. She contrived, however, on many occasions to embarrass the proceedings of her more liberal or constitutional ministers; but when she sanctioned by her signature the law respecting the *Ayuntamientos* (q.v.), a popular commotion ensued, and she gave to the new prime minister Espartero (q.v.), 1840, Oct. 10, a renunciation of the regency, and retired to France, but continued to interfere from her retirement in the affairs of Spain. After the fall of Espartero, she returned to Madrid 1843, and 1844, Oct., her marriage with Muñoz, then made Duke of Rianzares, was publicly solemnized. Her participation in the schemes of Louis Philippe as to the marriage of her daughters, 1846, and the continual exercise of all her influence against constitutional liberty, made her the object of great dislike to the whole liberal party in Spain. At length, 1854, July, a revolution expelled her from the country, and she again took refuge in France, returning to Spain 1864, and again retiring 1868.

MARIA LOUISA, *ma-rī'a lô-ē'za*: Regent of the French empire, second wife of Emperor Napoleon I., 1791, Mar. 12—1847, Dec. 18 (regent 1813-4); daughter of Emperor Francis I. of Austria. She was married to Napoleon, after his divorce of Josephine, 1810, Apr. 2. The marriage seemed to give stability to the Bonaparte dynasty, and to afford some prospect of peace to Europe. 1811, Mar. 20, she bore a son, who was called King of Rome. At the beginning of the campaign of 1813, Napoleon appointed her regent in his absence, but under many limitations. On the abdication of Napoleon, 1814, she went to Orleans, and thence, in company with Prince Esterhazy, to Rambouillet. She was not permitted to follow her husband, but went with her son to Schönbrunn, where she remained till, 1816, she received the duchies of Parma, Piacenza, and Guastalla, and entered on their government. She contracted a morganatic marriage with Count von Neipperg. She died at Vienna.

MARIAN—MARIA THERESA.

MARIAN, a. *mār'-an*: pertaining or relating to the Virgin Mary; or to Mary, Queen of England, daughter of Henry VIII., e.g., the Marian persecution.

MARIANA, *mâ-rê-â'nâ*, JUAN DE: Spanish historian and scholar: 1536-1624, Feb. 17; b. Talavera de la Reina; of humble parentage. In 1554 he entered the rising order of the Jesuits. His early studies, both in languages and in theology, were so brilliant that he was appointed to teach in the Jesuit schools, first at Rome (where the celebrated Bellarmine was one of his scholars) 1561, in Sicily 1565, and in Paris 1569. After seven years in Paris his health compelled his return to his native country, and he settled at Toledo, where he resided till his death. His retirement did not prevent his energetic and sustained literary activity. Of his History of Spain, he published 20 books 1592, and 10 additional books 1605, bringing the narrative to 1516. The original was in Latin, the elegance and purity of which have secured for M. a place among the most distinguished modern Latinists. Its great historical merit also is admitted, though with some drawbacks, even by such writers as Bayle. M. himself published a Spanish translation, still one of the classics of the language. The most celebrated of M.'s many works is his well-known treatise, *De Rege et Regis Institutione* (1599), in which is raised the question, Whether it be lawful to overthrow a tyrant? M. decides that it is—even where the tyrant is not a usurper but a lawful king: see JESUITS. The principles of the book, in other particulars, are in the main the same as those of all modern constitutional writers. The tyrannicide doctrines of this writer drew much odium on the entire order of Jesuits; but it should be noted, that while, on the one hand, precisely the same doctrines were taught in almost the same words by several Prot. contemporaries of M. (see Hallam's *Literary History*, III. 130-140); on the other, M.'s book itself was formally condemned by the general Acquaviva, and the doctrine forbidden to be taught by members of the order.

MARIANNA, *mâ-re-ân'nâ*: episcopal city of Brazil, province of Minas-Geraes. In the neighborhood are gold, silver, and lead mines. Pop. 8,000.

MARIANNE' ISLES: see LADRONES.

MARIA THERESA, *ma-rî'a tê-rê'sâ*, Empress of Germany, and Queen of Hungary and Bohemia: 1717, May 13—1780, Nov. 29; b. Vienna (queen 1740-80, empress 1765-80); daughter of Emperor Karl VI. By the Pragmatic Sanction (q.v.), her father appointed her heir to his hereditary thrones. In 1736, she married Francis Stephen, Grand Duke of Tuscany, to whom she gave an equal share in the government when she became Queen of Hungary and of Bohemia, and Archduchess of Austria, on the death of her father, 1740, Oct. 21. She found the monarchy exhausted, the finances embarrassed, the people discontented, and the army weak; while Prussia, Bavaria, Saxony, Naples, and Sardinia, stirred

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up by France, put forward claims to portions of her dominions founded chiefly on the extinction of the male line of the House of Hapsburg. Frederick II. of Prussia soon made himself master of Silesia; Spain and Naples laid hands on the Austrian dominions in Italy; and the French, Bavarians, and Saxons conquered some of the hereditary Austrian territories. The young queen was in utmost danger of losing all her possessions, but was saved by the chivalrous fidelity of the Hungarians, the assistance of Britain, and most of all by her own resolute spirit. Her enemies also quarrelled among themselves; and the War of the Austrian Succession, after lasting more than seven years, terminated in her favor by the peace of Aix-la-Chapelle, 1748. She lost only Silesia and Glatz, and the duchies of Parma, Piacenza, and Guastalla, while, on the other hand, her husband was elected emperor. During the time of peace, she made great financial reforms; agriculture, manufactures, and commerce flourished, the national revenues greatly increased, and the burdens were diminished. The empress availed herself of the increase of the revenue for increase of her military power. She held the reins of government herself, but was much guided by her husband and her ministers. She found at last in Kaunitz (q.v.) a minister with the wisdom and energy requisite for the conduct of affairs, and in him she placed almost unlimited confidence. The *Seven Years' War* (q.v.) between Austria and Prussia again reduced Austria to exhaustion; but when it was concluded, the empress renewed her efforts to promote the national prosperity, and made many important reforms, ameliorating the condition of the peasantry, and mitigating the penal code. Her son Joseph was elected king of the Romans, 1764; and on the death of her husband, 1765, she associated her son with herself in the government of her hereditary states, but in reality committed to him the charge only of military affairs. She joined with Russia and Prussia in the partition of a third part of Poland (1772), after the death of Augustus III., though she at first objected to the proposed spoliation, and thought it necessary to satisfy her conscience by obtaining the approval of the pope. Galicia and Lodomeria were added to her dominions at this time. She also compelled the Porte to give up Bukowina to her (1777). The brief Bavarian war of succession ended in her acquisition of the Innthal, but led to the formation of the *Fürstenbund* or *League of German Princes*, which set bounds to the Austrian power in Germany. Throughout her reign, she evinced a resolute and masculine character, and raised Austria from deep depression to a height of power such as it had never previously attained. Although a zealous Rom. Catholic, she maintained the rights of her crown against the court of Rome, and endeavored to correct some of the worst abuses in the church. She prohibited the presence of priests at the making of wills, abolished the right of asylum in churches and convents, suppressed the Inquisition in Milan, and, 1773, the order

MARIAZELL—MARIE DE' MEDICI.

of Jesuits. She also forbade that any person, male or female, should take monastic vows before the age of 25 years. She did nothing, however, to ameliorate the condition of the Protestants in her dominions. She had three sons and six daughters; among the latter was Queen Marie Antoinette (q.v.). Her eldest son Joseph II., succeeded her.

MARIAZELL, *mâ-rê-â-tsěl*: most famous place of pilgrimage in Austria, on the n. border of the crownland of Styria, 24 m. n. of Bruck. It consists of a number of inns, or lodging-houses, and is visited by 100,000 pilgrims annually. Here there is a wooden image of the Virgin, about 18 inches high, believed to possess the power of working miracles. During the great annual procession from Vienna, the greater number of pilgrims of both sexes spend the night in the woods in drinking, singing, and general riot. Formerly, the processions from Gratz and Vienna took place at the same time, but, owing to the fighting, as well as debauchery, that characterized the occasions, the processions were assigned to different times. Pop. 1,100.

MARICOPAS: see COCO-MARICOPAS.

MARIE DE' MEDICI, *mâ-rê' dâ mēd'e-chē*, Queen of France, wife of Henri IV.: 1573, Apr. 26—1642, July 3 (regent 1610—17); b. Florence; daughter of Francis I., Grand Duke of Tuscany. She was married to Henri 1600, Dec. 16; and in Sep. following gave birth to a son, afterward Louis XIII. The union was not happy. M. was an obstinate, passionate, waspish, and withal dull-headed woman, and her quarrels with the king soon became the talk of Paris. She was—as such women are apt to be—wholly under the influence of favorites. Leonora Galigai and Concini, who professed to be a married pair, exercised a disastrous influence over her mind, and encouraged her dislike to her husband. The assassination of Henri (1610, May 14) did not much grieve her, and she was even suspected of complicity in the act, though nothing was ever ascertained that could incriminate her. For the next seven years she governed as regent, but proved as worthless a ruler as she had been a wife. After the death of Concini, a sort of revolution took place. Her son, Louis XIII., assumed royal power. M. was confined to her own house, and her son refused to see her. Her partisans tried to bring about a civil war, but their attempts were futile; and by the advice of Richelieu, then Bp. of Luçon, she made her submission to her son 1619, and took her place at court. M. hoped to win over Richelieu to her party, but she did not in the least comprehend that mighty genius; however, she soon found that he had no mind to be ruled by her, whereupon she resolved, if possible, to undermine his influence with the king. Her intrigues for this purpose failed; she was imprisoned in Compiègne, whence she escaped, and fled to Brussels 1631. Her last years were spent in utter destitution, and she is said to have died in a hay-loft at Cologne,

MARIE AMELIE—MARIE ANTOINETTE.

MARIE AMELIE, *mâ-re' â-mâ-lê'* DE BOURBON; Queen of the French, wife of King Louis Philippe: 1782–1866; b. Sicily; daughter of Ferdinand IV., King of Naples, afterward Ferdinand I., King of the Two Sicilies. She was educated by private tutors in Sicily, Naples, and Venice; married Louis Philippe, then Duke of Orleans, and exiled from France, 1809, Nov. 25; and from the time of her husband's election as king (1830) till his dethronement (1848) she avoided political concerns, and applied herself with great faithfulness to domestic duties and the zealous promotion of public charities. After the dethronement, she joined her husband at Claremont, the palace of the king of the Belgians, near London, where both passed the remainder of their lives. She was the mother of five sons and three daughters, the eldest son, Duke d'Orleans, died 1842; the eldest daughter 1839; and the fifth son, Duke de Montpensier, 1890. The other sons are the Duke de Nemours, Duke d'Aumale, and Prince de Joinville; and daughters Louise, subsequently queen of the Belgians; and Clementine, wife of the Prince of Saxe-Coburg.

MARIE ANTOINETTE, *mâ-rê' ông-twâ-nê'* DE LORRAINE, JOSEPH JEANNE, Queen of France, wife of Louis XVI: 1755, Nov. 2—1793, Oct. 16; b. Vienna; youngest daughter of Francis I., Emperor of Germany, and of the famous Maria Theresa (q.v.). M. A., at the age of 14, was betrothed to the Dauphin; and in the following year was married at Versailles. Her reception by her husband and the king, Louis XV., was flattering; but her Austrian frankness and simplicity, her naïveté, unceremonious pleasantry, and detestation of rigid etiquette, scandalized Versailles. Soon after the accession of Louis XVI., 1774, May, which made her queen at 19 years of age, libels were circulated by her enemies, accusing her of constant intrigues, not one of which has ever been proved. Her faults, as a queen (and, in that age which was rapidly growing earnest, angry, and imbibed, they were fatal faults), were natural levity, girlish love of pleasure, of great banquets, and of extravagant display in dress, aristocratic indifference to general opinion—consistent with the absolutist notions of her empress-mother, Maria Theresa, reckless favoritism for unworthy friends, and lamentable incapacity to see the actual misery of the great masses of the French nation. The poor queen's whole social life was a mistake. Her careless intimacy with the most dissipated society, her night visits to masked balls, did not fail to lower her in public esteem, though there is absolutely no good evidence of any personal immoralities on her part. The affair of the *diamond necklace* (q.v.), 1785, hopelessly compromised her good name in the eye of the public, though, in fact, M. A. was innocent of any grave offense. Her political rôle was not more fortunate. She was from the first distrusted as only an Austrian spy in exalted station: probably indeed she was Austrian at heart; and probably her mother sought to use her in the interest of some

MARIE ANTOINETTE.

of her plans for Austria; but there is no evidence of any consistent line of policy adopted by M. A. in that interest. Loménie de Brienne and Calonne were ministers of her choice, and she shared the opprobrium which came upon them for their reckless squandering of the national finances. She strongly opposed the assembly of the notables, and in the following year, of the states-general; and, indeed, she had good reason to dread their convocation, for one of the first acts of the Notables was to declare the queen the cause of the derangement of the finances. From the first hour of the Revolution, she was an object of fanatical hatred to the mob of Paris. Her life was attempted at Versailles by a band of assassins, 1789, Oct. 6, and she narrowly escaped. After this, she made some spasmodic efforts to gain the good-will of the populace by visiting the great manufactories of the capital, such as the Gobelins, and by seeming to take an interest in the labors of the workmen, but the time was gone by for such transparent show to succeed. The relentless populace only hated her the more. Much of the fatal vacillation of the king's policy was due to her influence. She had far the strongest will of the two: she was obstinate, and never ready to hear advice or take warning. Louis saw the need of concession and of actual reform; and, if left to himself, would doubtless have entered on a policy which, even though it might not have saved his throne, would have precluded the frightful features of the catastrophe which was swiftly drawing near. M. A. refused the advice of those who were at first the more moderate leaders of the popular movement, and who counselled compromise, looking toward establishing a constitutional government: the queen would not abate her claims, nor trust any of those who dared avow any sympathy with the rights of the people. The king was strong enough to refrain from fully adopting her policy, but not strong enough to carry out, against her influence, a policy of justice and of wisdom to which he was inclined. At last, after long refusal, she resolved on flight. Her husband hesitated to abandon his country, and she would not go without him. A dim sense of kingly duty and honor was not lacking in the well-meaning and good-natured Louis, but after the mob stopped his coach 1791, Apr. 18, and would not let him go to St. Cloud, he consented to flight on the night of June 20. Unfortunately, the royal fugitives were recognized and captured at Varennes. From this time M. A.'s attitude became heroic; but the French people could not rid themselves of the suspicion that she was secretly plotting with the allies for the invasion of the country. After the useless effort to defend the Tuileries, 1792, Aug 10, she was confined in the Temple. Separated from her family and friends, she was removed to the Conciergerie, by order of the convention; condemned after mock trial by the Revolutionary Tribunal (Oct. 15), and guillotined next day. See *Mémoires sur la vie privée de Marie Antoinette*, by Mme. Campan (1823); Feuillet de Conches, *Louis XVI., Marie Antoinette et Mme.*

MARIE GALANTE—MARIENWERDER.

Elisabeth (1864-73); D'Arnoth, *Correspondance secrète entre Marie Thérèse et le Comte Mercy d'Argenteau, avec des lettres de Marie Thérèse et Marie Antoinette* (2d ed., 1875); and Yonge, *Life of Marie Antoinette* (1876).

MARIE GALANTE, *mâ-rê' gâ-lôngt'*: island in the W. Indies, one of the Lesser Antilles, 17 m. s.e. of Guadeloupe, about 60 sq. m., mostly covered by forests, and surrounded by steep rocky shores. It belongs to France. The cultivated parts produce sugar, coffee, and cotton. Cattle and horses are numerous, the latter of esteemed breed. Its chief town is Grandbourg, or Marigot, on the s.w. coast (pop. 2,000). M. G. is named from the ship commanded by Columbus when he discovered the Island 1493.—Pop. 15,000.

MARIENBAD, *mâ-rê'ên-bât*: one of the most frequented of European spas, 33 m. n.w. of Pilsen, abt. 18 m. s. of Carlsbad, almost 2,000 ft. above sea level. The springs of M. have long been used by the people of the vicinity, but since 1857 it has become a resort for persons from distant parts of the world. The springs are numerous, varying in temperature from 48° to 54° Fahrenheit. They are saline, containing sulphate of soda and various alkaline ingredients, but differing considerably in composition and qualities. In general they resemble those of Carlsbad, except that they are cold and have twice the quantity of purgative salts. They are used both internally and in the form of baths. Great quantities of the waters of some of the springs, about a million bottles annually, are exported to distant places. M. is a picturesque and charming place, surrounded by wooded heights, and is visited every season by 12,000 or 13,000 people. Pop. (1880) 2,000.

MARIENBERG, *mâ-rê'ên-běrch*: town of Saxony, 38 m. s.w. of Dresden. It has some manufactures; also mineral baths. Pop. (1880) 6,162.

MARIENBURG, *mâ-rê'ên-búrg* or *-búrch*: old town of Prussia, province of Prussia, on the Nogat, a channel of the Vistula, 28 m. s.e. of Danzig. It was long the seat of the grand masters of the Teutonic Order (q.v.) of Knights, who removed from Venice hither 1300. The first fortress of the Knights, however, was founded here 1274, as the seat of a commandery against the pagan Prussians. M. remained in the hands of the Knights till 1457, when in the decline of the order it passed into the hands of the Poles. The castle, or palace, in which 17 grand masters had resided, a noble edifice in a species of Gothic peculiar to the vicinity of the Baltic, was restored 1820. Pop. (1875) 8,538; (1880) 9,559; (1885) 10,136.

MARIENWERDER, *mâ-rê'ên-rě-děr*: city, cap. of W. Prussia, and of the govt. of M., picturesquely situated on a tributary of the Vistula, 47 m. s.s.e. of Danzig. It has a cathedral of the 13th c., and an ancient castle. M. is the residence of numerous govt. officials. There are some manufactures. Pop. (1880) 8,238.

MARIETTA—MARIETTE.

MARIETTA, *mā-rĭ-ĕt'a*: city, county-seat of Washington co., O., on the e. bank of the Muskingum, at its confluence with the Ohio r., 85 m. s.e. of Columbus, 175 m. from Cleveland, 300 m. from Cincinnati, by water; terminus of the Marietta and Cincinnati, and the Marietta, Pittsburg and Cleveland r.rs.; pop. (1880) 5,444; (1890) 8,273; including the village of Harmar, which was annexed 1890, pop. (1900), 13,348. M. is one of the oldest cities in O., having been settled 1788 by settlers from New England under Gen. Rufus Putnam, and by them named after Marie Antoinette. It is regularly laid out, with wide streets and good buildings, on the site of a group of interesting prehistoric mounds, of which traces still remain. (For a description of those see Squier and Davis, *Ancient Monuments of the Mississippi Valley*.) Petroleum, iron, and coal are found in the vicinity; the industries are carried on in oil-works, iron foundries, machine-shops, a rolling mill, tanneries, and carriage, car, bucket, and chair factories. There are several newspapers, and banks, a fine city hall, a library, and art gallery, and no less than 15 churches. The city has a graded public school system, including a high-school, and is noted for the excellence of its educational facilities.—M. is the seat of Marietta College, chartered 1835, and maintained by endowment and voluntary subscription; a flourishing institution whose four fine buildings with their extensive grounds occupy a commanding location. The college has 23 instructors, and (1902) 270 students, including the pupils in the academic or preparatory department. It has an excellent library of about 60,000 volumes.

MARIETTE, *mā-re-ĕt'*, **AUGUSTE EDOUARD (MARIETTE PASHA)**: 1821, Feb. 11—1881, Jan. 19; b. Boulogne, France. He was educated at the college there, in which afterward he became prof.; and while so engaged first became interested in archæology, and published *Lettres à M. Bouillet* (Paris, 1847), an essay on the history of Boulogne. In 1848 he received a position in the Egyptian museum of the Louvre; and 1850, was sent by the govt. to gather Coptic mss. in Egypt. His excavations and discoveries in connection with his search for the true site of Memphis led to the finding of many important remains, such as the Serapeum, the first Memphian temple discovered, near the three great pyramids. Beginning to dig 4 m. w. of the accepted site of Memphis, M. came first upon an avenue of sphinxes, which led directly up to the magnificent granite and alabaster temple of Serapis mentioned by Strabo, which contained the sarcophagi of the sacred bulls of Apis from the 19th dynasty to the Roman supremacy. Besides these he found no less than 2,000 sphinxes, and over 4,000 statues, bas-reliefs, and inscriptions, some evidently of Greek construction; and various streets, colonnades, and other structures belonging to a great city. His excavations around the base of the sphinx near Gizeh not only disclosed the entrance to it, but proved it to be sculptured out of the solid rock. In 1854 he returned to Paris and

MARIGNANO—MARIGOLD.

was made conservator of the Egyptian museum in the Louvre; and 1855 was sent to Berlin to study Egyptian remains in the museums there. On his return to Egypt, 1858, the viceroy made him conservator of the monuments and antiquities of the land, with the title of bey (later promoted to pasha), with an annual appropriation for the prosecution of his researches, and the foundation and maintenance of the museum of Boulak. His discoveries at Tanis revealed the monuments of the Hyksos dynasty, and those at Thebes explain the chronology of the various dynasties. In 1860, he made the important discovery of the mummy of queen Aahhotep, of the 18th dynasty, with a wealth of jewels of exquisite workmanship belonging to her. In 1873, the Institute of France awarded him the biennial prize of 20,000 francs. His discoveries have been of utmost importance for the light that they have thrown upon the earliest periods of Egyptian history. His chief published works are *Mémoire sur la mère d'Apis* (1856); *Aperçu de l'Histoire d'Égypte* (1864); *Nouvelle table d'Abydos* (1856) account of a second tablet found in Abydos which supplies the vacancies of the first and gives a list of the kings of the first 6 dynasties, corroborating that of Manetho; *Le Sérapéum de Memphis* (with 110 plates, 1857-64); *Fouilles exécutées en Égypte, en Nubia, et au Soudan d'après les ordres du vice-roi d'Égypte* (1867); *Notice des principaux monuments du musée de Boulak* (1870); *Les Papyrus égyptiens du musée de Boulak* (1871); *Album du musée de Boulak* (with 600 photographic plates, 1873); and *Les Mastabas de l'Ancien Empire*, published after his death. He died at Cairo and lies buried in the museum-garden at Boulak, inclosed in an ancient Egyptian sarcophagus.

MARIGNANO: see MELEGNANO.

MARIGOLD, n. *mār'-i-göld* [the *Virgin Mary*, and *gold*]: a common garden-plant (see below.). MARIGOLD-WINDOW, a cathedral window circular in form—called also a CATHARINE-WHEEL WINDOW.

MARIGOLD: name given to garden plants of nat. ord. *Compositæ*, sub-ord. *Corymbiferae*, chiefly of the genera *Calendula* and *Tugetes*. The genus *Calendula* has the achenia remarkably curved, variously toothed, and very rough on the back. The species are annual and perennial herbaceous plants and shrubs, of which some of the former are found in the countries bordering on the Mediterranean, the latter chiefly in s. Africa—Pot M. (*C. officinalis*) is an annual, native of France and s. Europe, with an erect stem, 1-2 ft. high, the lower leaves obovate on long stalk, and large, deep yellow flowers. It has long been common in gardens, and there are varieties with double flowers. The whole plant has a slight aromatic odor, and bitter taste, and was formerly in repute as a carminative, also as an aperient and sudorific. The florets were the part used, and they were dried in autumn, to be preserved for use. They are often employed to adulterate saffron, and sometimes

'MARIGOT—MARINE FORTIFICATION.

for coloring cheese. They were formerly a frequent ingredient in soups, and are still so used in parts of England. The genus *Tagetes* consists of annual and perennial herbaceous plants, natives of the warmer parts of America, although *T. erecta*, frequently cultivated in Britain, bears the name AFRICAN MARIGOLD; and *T. patula*, another annual well known in flower-borders, is called FRENCH MARIGOLD. Both species are Mexican. They have been long in cultivation, and are admired for the brilliancy of their flowers.—CORN M. is a *Chrysanthemum* (q.v.)—MARSH M. (q.v.) has no botanical affinity with the true marigolds.

MARIGOT, n. *mǎr'î-gõt* [F. *marais*, a marsh]: a small lake close to or near the brink of a river, and fed by the overflowing of the river.

MARIGRAPH, n. *mǎr'î-grăf* [L. *mare*, sea; Gr. *graphō*, I write]: apparatus for registering the height of the tides.

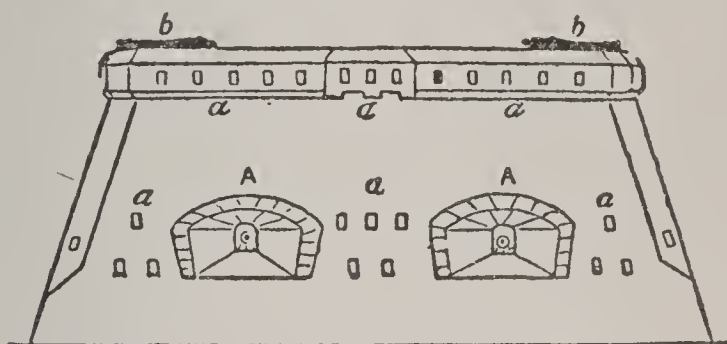
MARINADE, n. *mǎr'î-nād* [F. pickle—from *marin*, marine]: a liquor compounded of wine and vinegar, with herbs and spices, in which fish or meats are steeped before dressing to improve their flavor.

MARINE, a. *ma-rēn'* [L. *marīnus*, belonging to the sea—from *mǎrē*, the sea: It. *marina*, the sea-coast: F. *marin*, marine], of or pert. to the sea; near or in view of the sea; representing the sea; naval; maritime; nautical: N. a soldier who serves on shipboard (see MARINES): the navy or collective shipping of a kingdom or state; naval affairs or interests in general. MARINED, a. in *her.*, applied to an animal whose lower part terminates unnaturally like the tail of a fish. MARINER, n. *mǎr'î-nēr*, a seaman or sailor. MARINER'S COMPASS, a compass fitted for use on board ship (see COMPASS). MARINE-ENGINE (see STEAM ENGINE). MARINE-GLUE, a composition of tar and shellac. MARINE-SOAP, a soap chiefly made of cocoa-nut oil, adapted for washing with seawater. MARINE-STORE, in the United States called *junk-shop*, place where old ships' materials, as canvas, iron, junk, etc., are bought and sold; now applied to shops where any old articles, as iron, bottles, grease, etc., are bought and sold: such shops are subjected to restrictions by local laws in order to keep some check on their relations with thieves and other venders of stolen property.

MARINE' FORTIFICATION: fortification which can be approached by an enemy in ships or on the level of the sea; differing from a land fortification to which the approach is over the dangerous slope of the glacis. The combat is simply one between two powerful batteries, and the question to be decided is, whether the ship or the fort will first be placed *hors de combat*: the ship having ordinarily the largest number of guns, while the fort has more solid battlements, and its fewer guns of great calibre can be fired with a steadiness unattainable on so shifting a base as the ocean. Under these circumstances, the less relief a sea-fortress has the better, as

by so much the less is it likely to be hit from the shipping. Its walls are usually perpendicular, or nearly so. The magazines and quarters for the men are bomb-proof, as also are the casemates, from which the guns are usually fired, though sometimes, as in the martello-tower, the gun is worked on the top of the structure.

Sea-fortifications may be of various importance; the simplest being the battery consisting of a mere parapet formed in a cliff or on a hill, and mounted with guns to command the sea; these are generally built in such concealed situations, that it is hoped that they will not be observed by the hostile ships until they actually open fire. Such batteries are numerous all around the British coast. Next greater in importance is the Martello Tower (q.v.). More powerful still are the beach-forts: these are constructed of the most solid masonry, faced with massive iron plates, and armed with guns of the heaviest calibre, sweeping the very surface of the sea,



Casemated Bomb-proof Sea-fort :

A, casemate embrasures : **a**, loopholes for small-arms : **b**, guns mounted *en barbette*,

so as to strike an approaching ship between wind and water. The guns are usually in bomb-proof casemates, and the fort is often defended on the land side, if the coast be level; if, however, higher ground be behind, this would be useless, and then the sea-front alone is defensible. Most powerful of all sea-forts, however, are the completely isolated forts, with perpendicular faces and two or three tiers of heavy guns. Such are the tremendous batteries which render Cronstadt almost inapproachable. These forts are generally large, with all the requisites for a garrison to maintain itself; against them, wooden ships are of no avail, and in the war of secession, Fort Sumter at Charleston, showed itself no mean antagonist for iron-sides. In such forts, iron is now employed as the facing, in plates of such vast thickness and weight, that it is supposed no ship can ever possess comparable resisting power; and as they are armed with guns, the smallest of which are usually 300 pounders, it is expected that they will be able to destroy any fleet sent against them. There remain, however, some elements of uncertainty in the contest between ships and forts, as to their possible respective development of strength. Forts alone are not now trusted to as formerly. See GUN: GUN CARRIAGE: ETC.

MARINEO, *má-rê-nā ō*: town of Sicily, 11 m. s. of Palermo. Pop. 10,000.

MARINES—MARINETTE.

MARINES', *ma-rēnz'*: regular soldiers enlisted for service on board ships of war.

In the United States the marine corps was established by act of congress 1775, Nov. 10, and on the reconstruction of the navy, 1798, it was made liable at any time to do duty in the forts and garrisons of the United States, on the sea coast, or any other duty on shore, as the Pres. might direct. In addition to fort, garrison, and navy-yard duty, M. are provided for all naval vessels in commission, according to their rating. A first-class vessel will carry 1 capt., 1 lieut., 3 sergeants, 4 corporals, 2 musicians, and 40 privates; and a fourth-class 1 sergeant, 2 musicians, and 10 privates. In the navy, M. are considered as police, and are subject to the rules of the navy, except when the Pres. orders them on duty with the army. When army regulations are observed, the col. commandant receives a salary of \$3,500 per annum; cols., \$3,500; lieut.cols., \$3,000; majs., staff and line, \$2,500; capt., and asst. quartermasters, \$2,000; capt., \$1,800; 1st lieuts. \$1,500; 2d lieuts., \$1,400; privates from \$13 per month for first period of 5 years' service to \$20 for fifth period of 5 years; and musicians from \$21 to \$38 in first five years, according to rank, to \$26 to \$43 in fifth 5 years' period. The number of active officers allowed by law was (1903) 212, the new appointments are made only as vacancies occur. The number of privates on duty was 6,000.

MARINETTE *mār'ī-nēt*: city; cap. of Marinette co., Wis.; on Green bay, the Menominee river, and the Chicago and Northwestern, the Chicago Milwaukee and St. Paul, and the Wisconsin and Michigan railroads; 49 m. n. by e. of Green bay; opposite Menominee, Mich., with which it is connected by several railroad, wagon, and foot bridges. It has a commodious and safe harbor which has been improved by the federal govt., and a large trade by rail and water. There are 17 churches, 6 public-school buildings (cost over \$120,000), Rom. Cath. Acad. of Lourdes, commercial coll., and 2 daily and 6 weekly newspapers. There were (1902) 2 national banks with combined capital \$200,000; individual deposits \$2,542,334, loans and disc. \$1,934,076; resources \$2,910,037, surplus \$55,000.

The city, entirely modern in its improvements, has 10 large lumber mills, 2 paper mills, a box factory, an iron works and other manufactories, the combined products of which, in 1895, was valued at \$4,311,590, men employed 2,807; wages paid \$1,602,450. The making of pulp and paper is carried on extensively in M. and ranks next in importance to the lumber industry. Almost unlimited forests of valuable hard and soft woods assure Marinette-Menominee a continued prosperity long after the famous white pine that now makes this the chief lumber manufacturing centre of the world, shall have been exterminated. Assessed valuations 1902 were: Real est. \$3,844,680; pers. \$2,371,335—total, \$6,216,015; total tax \$25 per \$1,000. In 1902 (Oct. 1) the bonded debt was \$107,500, including bridge bonds \$4,000, sewer \$25,000, and school

MARINI—MARIO.

\$12,000, and refunding, \$43,500. Pop. (1890) 11,523; (1900) 16,195.

MARINI, *mâ-rê'nê*, or MARINO, *mâ-rê'nô*, GIAMBATTISTA: 1569, Oct. 18—1625; Mar. 25; b. Naples: Italian poet. He abandoned jurisprudence for poetry, a decision which led to his expulsion from home. All through life, M. seems to have courted troubles by his unbridled licentiousness, and many of his best compositions are polluted with shameless obscenity. M. sojourned successively in Rome, in Turin, and in France, where Marie de' Medici received him with marked favor, and conferred on him a liberal pension. His best work, the *Adone*, was written during his residence in France; and on its publication he revisited his native country (1622), and died at Naples. He is the founder of the *Marinist* school of poetry, of which the essential features are florid hyperbole and false overstrained imagery.

MARINO, or SAN MARINO: see SAN MARINO.

MARINO, *mâ-rê'nô*: town of central Italy 12 m. s. e. of Rome, near Lake Albano. Between the hill of M. and the ridge of Alba Longa is a wooded glen called *Parco di Colonna*, the site of the *Aqua Ferentina*, where the ancient Latin tribes held their general assemblies from the destruction of Alba to B.C. 338. In the middle ages M. was the stronghold of the Orsini family; in the 15th c. it became the property of the Colonna family who still retain it. Pop. 6,500.

MARIO, *mâ'rê-ô*, GIUSEPPE, Marquis de Candia: 1810, 1883, Dec. 11; b. Turin; of aristocratic family. He evinced from his boyhood high musical abilities. In 1830 he received his commission as officer in the Chasseurs Sardes; but for some youthful escapade was ordered from Genoa to a temporary retreat at Cagliari. There he resigned his commission, and as this was not accepted, he escaped to Paris. The young Sardinian deserter speedily won his way into the best circles of fashionable Paris, both by his genial nature and by the charm of his exquisite voice. Having contracted debts, however, he accepted the appointment of first-tenor of the Opera, with a salary of 1,500 francs per month; at the same time he changed his name from Marquis of Candia to Mario. After two years' study at the Conservatoire, M. made his début, 1838, Dec. 2, in *Robert le Diable*, first of a long series of operatic triumphs. At the Théâtre Italien, he took rank with Rubini, Lablache, Malibran, Sontag, and Grisi; and by none of these great artists was he excelled in purity, sweetness, method, and taste. 1845-50, he fulfilled an engagement in Russia, and on his return appeared in London, where his success was immense. M.'s operatic career was a succession of brilliant and remunerative engagements. In his private capacity, he was esteemed for his large liberality, and for his noble assistance to struggling artists. His répertoire embraced all the great works of Rossini, Bellini, Donizetti, and Verdi. He died at Rome.

MARIOLATRY.

MARIOLATRY, n. *mā'ri-ōl'ā-trī* [L. and Gr. *Marīā*, the Virgin Mary: Gr. *latreia*, worship]: a name given by Prot. polemical writers to the worship rendered by Rom. Catholics to the Virgin Mary. MA'RIOL'ATER, n. *-ā-tēr*, one who worships the Virgin Mary.—These names are intended to imply that the Rom. Cath. worship of the Virgin is the supreme worship of *latreia* or adoration, which Rom. Catholics earnestly disclaim, though, from her relation to the Lord Jesus, they hold her worship, which they style *hyperdulia*, to be higher than that of all other saints: see INVOCATION OF SAINTS: MARY, THE BLESSED VIRGIN. Many examples of prayers addressed to Mary, of acts of worship done in her honor, and of expressions employed regarding her, are alleged by controversialists, for the purpose of showing that the worship of Mary in the 'Roman Church' is in effect 'adoration.' Such are (see Farrar's *Ecclesiastical Dictionary*, p. 372) the 'Litany of the Sacred Heart of Mary;' the adaptation of the Athanasian Creed as a profession of faith regarding her; addresses to her as the 'hope of the desponding, and refuge of the destitute;' professions that 'her Son has given her such power that whatever she wills is immediately done;' kneelings and prostrations before her image; pilgrimages in her honor. To these and similar allegations, Rom. Catholics reply, that many of the quoted prayers and devotional practices are entirely unauthorized by the church, and that some of them are undoubtedly liable to misinterpretation; but they further insist that all such prayers, however worded, are to be understood, and are, in fact, understood by Rom. Catholics, even ordinarily acquainted with the principles of their faith, solely as petitions for the intercession of Mary, and as expressions of reliance, not on her own power, but on the efficacy of her prayers to her Son. This article, not entering into such controversies, presents an account of the origin and nature of the worship of the Virgin Mary in the church, and of its present condition, as it is professed by those religious bodies among which the practice now prevails.

Although no trace is found in the New Testament of any actual worship of the Virgin Mary, yet Rom. Cath. interpreters regard the language of the angel Gabriel, who saluted her as 'full of grace,' or highly 'favored,' and as blessed 'among women,' and her own prediction in the canticle of the Magnificat, that 'all nations should call her blessed' (Luke i. 48), as a foreshadowing of the practice of their church; and they rely equally on the language employed by the early Fathers, e.g., Irenæus, regarding the Virgin, though Protestants consider it as having reference to the incarnation. But it seems quite certain that, during the first ages, the invocation of the Virgin and the other saints must have held a very subordinate place in Christian worship; the reason for which, according to Rom. Catholics, was probably the fear of reintroducing among the recent converts from paganism the polytheistic notions of their former creed. But from the

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time of the triumph of Christianity in the 4th c., the traces of this worship become more apparent. St. Gregory Nazianzen, in his panegyric of the virgin martyr Justina, tells, that in her hour of peril she 'implored Mary the Virgin to come to the aid of a virgin in her danger' (Opp. tome i., 278, 279). St. Ephraim, the Syrian, in the same age, uses language held by Rom. Catholics to be equally favorable to their view: and the fact that about this time there arose a sect, the Collyridians, who were condemned for the actual *adoration* of the Virgin, seems to them to prove that some worship of her must have existed in the church, out of which this excessive worship by the Collyridians grew. But it was only after the heresy of Nestorius that the worship of Mary seems to have obtained full development. His denial to her of the character of mother of God, and the solemn affirmation of that character by the ecumenical council of Ephesus (431), had the effect at once of quickening the devotion of the people, and drawing forth a more marked manifestation on the part of the church of the belief which had been called into question. The 5th and 6th c., both in the East and in the West, exhibit clear evidence of the practice; and the writers of each succeeding age till the Reformation speak with gradually increasing enthusiasm of the prerogatives of the Virgin Mary, and of the efficacy of her functions as mediator with her Son. St. Bernard, and, still more, St. Bonaventura, carried this devotional enthusiasm to its greatest height; and the popular feeling found a stronger and still more strong manifestation in the public worship of the church. From a very early period, we find several festivals of the 'blessed Virgin;' but in the centuries now referred to the number received large additions. The institution of the 'Rosary of the Virgin Mary,' the appointment of a special office in her honor, and, more than all, the fame of many of the sanctuaries which were held to be especially sacred to her worship, gave a prominence to the devotion which Protestants are not able to reconcile with the honor which they hold due to God alone. It is deeply to be regretted, if it be a fact, that the tenderness and the honor due to her mysteriously pathetic and sublime relation to the Son of God, have been somewhat precluded by the claim for worship set up for her in large portions of the church.

The chief festivals of the Virgin, common to the Western and Eastern Churches, are the Conception, the Nativity, the Purification, the Annunciation, the Visitation, and the Assumption. All these festivals are retained in the calendar of the Church of England. The Roman Church has several special festivals, with appropriate offices—all, however, of minor solemnity.

MARION.

MARION, *mār'ī-on* or *mā'rī-on*: city, cap. of Grant co., Ind.; at the junction of the Columbus Chicago and Indiana Central, and the Cincinnati Wabash and Michigan r rs., 40 m. e.s.e. of Logansport. It contains wood-working and flax factories, laundry, flour-mills. Pop. (1900) 17,337.

MARION, *mār'ī-on* or *mā'rī-on*: city, cap. of Marion co., Kan; on the Cottonwood river and the Chicago Kansas and Nebraska railroad; 165 m. s.w. of Kansas City. It is the site of an ancient Indian village; has water works (cost \$75,000), municipal building (cost \$15,000), national and state banks; and has valuable magnesian limestone quarries, mineral springs, and natural gas wells in its vicinity. Pop. (1890) 2,047; (1900) 1,824.

MARION: city, cap. of Marion Co., O.; on the Cleveland Columbus Cincinnati and Indianapolis, the Columbia and Greenville, and the New York Pennsylvania and Ohio railroads; 40 m. n. of Columbus, 85 m. n.e. of Dayton. It contains the co. court-house, 11 churches, 4 private banks, several machine shops and grain elevators, and manufactories of steam engines, agricultural implements, carriages and wagons, and furniture. Pop. (1870) 2,531; (1880) 3,899; (1890) 8,327; (1900) 11,862.

MARION, *mār'ī-on*, FRANCIS: 1732-1795, Feb. 28; b. in Winyaw, near Georgetown, S. C., of a Huguenot family. In 1759 he served in a troop of volunteer cavalry, commanded by one of his brothers, against the Cherokees; and on similar expeditions 1760 and 61. He was elected to the S. C. provincial congress 1775, and made capt. in Moultrie's regiment. Promoted to major, he took part in driving the British fleet from Charleston harbor, 1776, June 28. Next year he served in the defense of Ga., and had command of Ft. Moultrie, in Charleston harbor; 1779 he joined in the fruitless attack on Savannah. When Gates took command in the south, M. joined him with his independent brigade, but was not appreciated. 1780, Aug. 16, Gates was defeated at the battle of Camden, whereupon M. waylaid the British and took their prisoners from them. From this time to the close of the war, M. and his force waged an irregular, harassing warfare against the enemy that, for daring and dash, ingenuity of plans, pertinacity of purpose, and general effectiveness, is without a parallel in the war. He was commissioned brig.gen. 1780, and united with the main army after Greene took command; 1781, he and Lee took Ft. Watson, and so loosened the British hold on S. C.; and, Sep. 8, at Eutaw Springs, he commanded the American right, and helped pursue the enemy. After the British evacuated Charleston, 1782, Dec. 14, he disbanded his brigade, and retired to quiet life as a small farmer; from which he was soon again called to serve in the state senate, which he did until 1790, when he was made member of the convention for framing a constitution for the state. In 1784 he was made commandant of Ft. Johnson, and was married the same year. He died at Pond Bluff, Berkeley co., S. C.

MARIONNETTE—MARIPUT.

MARIONNETTE, n. *mă-rî-ô-ně'* [F. *marionnette* for *mariolette*, a puppet: a dim. of OF. *mariole*, a doll, a puppet—from *Mariā*, the Virgin Mary]: originally little figures of the Virgin Mary; a puppet: PLU. a puppet show; little jointed puppets of wood or card-board, representing men and women, and moved by means of cords or springs by a concealed agent. They are exhibited in what are called marionnette theatres, the exhibitor varying his voice, so that a sort of dramatic performance is accomplished. This entertainment, indications of which have been discovered in the tombs of Egypt, was known to the Greeks, and from them passed to the Romans. In modern times, it has prevailed chiefly in France and Italy, and has there reached a respectable degree of artistic perfection.

MARION HAR'LAND (*pseudonym*): see **TERHUNE**, **MARY VIRGINIA**.

MARIOTTE, *mâ-rê-ô'*, **EDME**: French natural philosopher; b. in Burgundy during the first half of the 17th c.; d. 1684. He was the prior of St. Martin-des-Beaune, when the Acad. of Sciences admitted him within its pale 1666. His life was spent almost wholly in his cabinet, among his books and instruments. M.'s forte was in an extraordinary power of drawing conclusions from experiment. He repeated Pascal's experiments on gravitation, and detected some peculiarities which had escaped that ingenious philosopher; confirmed Galileo's theory of motion; enriched hydraulics with a multitude of discoveries, and finally made a thorough investigation into the subject of the conduction of water, and calculated the strength necessary for pipes under different circumstances. His collected works were published at Leyden 1717, and at the Hague (2 vols. 4to) 1740. His *Traité du Mouvement des Eaux* was published by La Hire (Paris 1786, 12mo).

MARIOTTE', LAW OF; an empirical law deduced by Boyle (q.v.) and Mariotte (q.v.) from two independent experiments, though Boyle's discovery seems to have preceded M.'s by several years. It is generally expressed as follows: *The temperature remaining the same, the volume of a given mass of gas is in inverse ratio to the pressure which it sustains.* This law may be held to be substantially correct within a considerable range of pressure. But the labors of Regnault have made it evident that atmospheric air and most other gases, especially under very high pressures, are really more compressed than if they followed the law. This deviation is most marked in the case of gases which are in course of being liquefied, as they approach the point of liquefaction. *Mariotte's Instrument* is a J-shaped tube devised to demonstrate the law.

MARIPUT, n. *mă-rî-pūt* [unascertained]: the zoril, an animal of the skunk kind.

MARISH—MARITZA.

MARISH, n. *mǎr'ish* [F. *marais*, a marsh, a bog—from OF. *maresc*—from mid. L. *maris'cus*; O.Ger. *marsch*, a marsh; AS. *mersc*, a marsh]: in *OE.*, low wet ground; a marsh; a bog: **ADJ.** marshy; swampy.

MARIST, n. *mār'ist* [F. *Mariste*—from *Marie*, the Virgin Mary]: in *chh. hist.*, a congregation founded, 1836, by some priests at Lyons for the education of the poor and for mission work. They wear the ordinary dress of secular priests, but take solemn vows.

MARITAL, a. *mǎr'ĩ-tāl* [F. *marital*, marital—from L. *maritālis*—from L. *marītus*; F. *mari*, a husband]: pert. to a husband.

MARITIME, a. *mǎr'ĩ-tīm* or *mǎr'ĩ-līm* [F. *maritime*—from L. *marīlīmus*, belonging to the sea—from *mǎrē*, the sea: It. *maritimo*]: pert. to or connected with the sea; done on the sea; having a navy and commerce by ships, as a state or power; situated near the sea. **MARITIME LAW**: see under **LAW**. **MARITIME NATIONS**, nations that have seaports, a navy, and commerce by ships. *Note.*—**MARITIME** denotes 'bordering on the sea,' as a *maritime* town or nation; 'belonging to those bordering on the sea,' as *maritime* laws or rights. **MARINE** denotes 'of or pert. to the sea,' as *marine* productions, a *marine* shell; 'transacted at sea,' or 'doing duty on it,' as *marine* service, *marine* forces.

MARITIME PROVINCE, in the Russian Empire: part of the general-governorship of Eastern Siberia; extending along the Siberian coast of the Pacific from Corea to the Arctic Ocean, and including Kamtehatka (q.v.), the island of Saghalien, and several small islands along the coast; length 2,300 m., width 40–420 m.; 730,000 sq. m.; cap. Khabarovka, at the confluence of the Amur and Usuri rivers. The n. part, land of the Chukeches, occupies the n.e. peninsula of Asia between the Arctic Ocean and the seas of Behring and Okhotsk, and contains the highest known mountains (about 8,200 ft. high) within the arctic circle. The middle part is a strip 40–60 m. wide along the shore of the sea of Okhotsk, occupied by mountains 4,000–7,000 ft. high. The inhabitants are Tunguses, who live by hunting and fishing. The s. part includes two distinct regions. A wide and deep depression runs from the n.e. extremity of the Bureya range s.w. to the junction of the Amur and Usuri rivers, thence to the lowlands of the lower Sungari river. The best part of the whole province is at the s. extremity in the valley of the Suifun river. Pop. (estimated) 20,000 Russians, 37,000 natives.

MARITZA, *mā-rĩ'sā* (the anc. *Hebrus*): river of European Turkey, rising in the Balkans, and flowing e.s.e. through the province of E. Roumelia to Adrianople, where it bends s., and falls into the Ægean by the Gulf of Enos. It is more than 300 m. in length, and is navigable to Adrianople, about 100 m. from its mouth.

MARIUPOL—MARIUS.

MARIUPOL, *mâ-rê-ô'pol*, or **MARIAMPOL**, *mâ-rê-âm'pol*: seaport in the govt. of Ekaterinoslav, Russia, near the place where the Kalmius falls into the Sea of Azov, 60 m. w. of Taganrog. It was founded 1779 by Greek emigrants from the Crimea, and the port was opened to foreign vessels 1836, when 20 ships entered it; but afterward their number increased to more than 300. The articles of export are wheat, linseed, wool, and hides from the adjacent provinces, the value being about \$2,500,000. The imports are insignificant, ships usually arriving in ballast. The harbor is shallow, and, like all ports on this sea, is becoming more so. The speech is a corrupt jargon derived from the Turkish and Greek languages. Pop. (1878) 9,037; (1882) 14,980.

MARIUS, *mā'rî-ūs*, **CAIUS**: Roman general: B.C. 155–86; b. at the village of Cereatæ, near Arpinum, of obscure family. In the Numantine war, B.C. 134, beginning as a soldier in the ranks, he served with great distinction under the younger Scipio Africanus, who treated him with high consideration, and even indicated that he thought him a fit successor to himself. B.C. 119, he was elected tribune of the plebs, and signalized himself by his vigorous opposition to the nobles, by whom he was intensely hated. B.C. 114, he went to Spain as propretor, and cleared the country of the robbers who infested it. He now greatly improved his position by marrying Julia, aunt of Julius Cæsar. He accompanied Q. Cæcilius Metellus to Africa B.C. 109, was elected consul two years later, and intrusted with the conduct of the Jugurthian war, which he brought to a successful close in the beginning of B.C. 106. From this period dates the jealousy between him and L. Sulla, then his questor, which was ultimately productive of so many horrors. Meanwhile, an immense horde of Cimbri, Teutones, and other northern barbarians, had burst into Gaul, and repeatedly defeated the Roman forces with great slaughter. M. was again called to the consulate B.C. 104, and for the third, fourth, and fifth time in the following years, B.C. 103–101, for it was felt that he alone could save the republic from the great armies that hung like a cloud over its northern border. The war against the Teutones in Transalpine Gaul occupied him more than two years: but he finally annihilated them in a battle of two days' duration at Aquæ Sextiæ, now Aix, in Provence, where 200,000—according to others, 100,000—Teutones were slain. After this, he assumed the chief command in n. Italy against the Cimbri (q.v.), whom he also overthrew, near Vecellæ, to w. of Milan, with a like destruction, B.C. 101. The people of Rome knew no bounds to their joy. M. was declared the savior of the state, the third founder of Rome, and his name was mentioned along with those of the gods at banquets. He was made consul for the sixth time B.C. 100. It has often been remarked, that, had he died at this period, he would have left one of the greatest reputations in

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Roman history. When Sulla, as consul, was intrusted with the conduct of the Mithridatic war, M., who had long manifested an insane jealousy of his patrician rival, attempted to deprive him of the command, and a civil war began B.C. 88. M. was soon forced to flee, and after enduring the most frightful hardships, and making numerous hairbreadth escapes, he reached Africa, where he remained until a rising of his friends took place under Cinna. He then hurried back to Italy, and, with Cinna, marched against Rome, which was compelled to yield. M. was delirious in his revenge upon the aristocracy; a band of 4,000 slaves carried on the work of murder for five days and nights. M. and Cinna were elected consuls together for the year B.C. 86, but M. died after he had held the office 17 days.

MARJORAM, n. *mâr'jō-rām* [F. *marjolaine*—from mid. L. *majōrāca*—corrupted from L. *amārācus*, marjoram: Ger. *majoran*; It. *majorana*], (*Origanum*): genus of plants of nat. ord. *Labiatae*, having a ten-ribbed, five-toothed calyx, loose spikes, and broad bracts. The species are annual, perennial, and shrubby plants, natives chiefly of the East, and of the countries bordering the Mediterranean. They abound in a yellow essential oil—*Oil of M.* or *Oil of Origanum*—obtained from some of the species by distillation.—The COMMON M. (*O. vulgare*)



1, Sweet Marjoram (*Origanum Majorana*); 2, Common Marjoram (*Origanum vulgare*).

with purplish bracts, is European; rare in N. Amer. It is perennial, has a stem about 12 inches high, ovate leaves, and roundish, paniced, crowded heads of purple flowers, with large bracts. It is aromatic, and is used, as are also other species, as a seasoning in cookery; and an infusion of it is a stimulant, tonic, and remedy for

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nervousness. The powder is an errhine. The essential oil is used as a palliative of toothache, and is mixed with olive oil, to make a stimulating liniment, deemed a remedy for baldness and in rheumatic complaints, and in cases of sprains and bruises.—The SWEET M. of gardens (*O. Majorana*) is an annual plant, a native of Greece and the East, with ovate grayish-green leaves, covered on both sides with a thin down, about three roundish heads of flowers growing close together, wrinkled bracts, and small white flowers. Its uses are similar to those of the common marjoram.

MARK, *n.* *mârk* [AS. *mearc*, a mark, a boundary: Dut. *merk*; Icel. *mark*; O.H.G. *marc*, a mark, a token: Icel. *merkia*, to mark, to signify]: any visible impression, as a line, streak, or channel; any sign of distinction; a print; a stamp; evidence; sign; notice taken; an object; that at which a missile is directed; conspicuous character, as a man of *mark*; impression produced by ability or character, as 'he has made his *mark*'; the **X** made by a person who cannot write his name.—*M.* as a geog. term (primarily the *mark* of a country's limits—the *march*—see under MARCHES) was formerly a designation of the border countries or districts of the German empire, conquered from neighboring nations; e.g., the marks of Austria, of N. Saxony or Brandenburg, Lausatia, Moravia, Steiermark, etc. The governors intrusted with the charge of these border districts, or *marks*, were called *mark-grafs*, corresponding to the English and Scottish *Wardens of the Marches*. See MARQUIS. *V.* to draw or make an impression on or in; to impress with a token; to denote; to heed or regard; to observe. MARK'ING, *imp.* MARKED, *pp.* *mârk't*. MARK'ER, *n.* *-ér*, one who marks; one who registers the scores at billiard-tables. MARKS, *n. plu.* *mârks*, the depths of the lead-line, which are marked by having a distinguishing piece of leather, cord, or bunting rove through the strands; the numerical value of an examination, as, he gained 50 marks out of 70. MARKING-INK, indelible ink, used for putting private marks on linen. MARKS'MAN, he who shoots well. LANDMARK: see under LAND. TRADE-MARK: see under TRADE. TO MARK OUT, to notify by a mark; to point out; to designate. TO MARK TIME, in *mil.*, to notify the rate of step by the movements of the foot; in *music*, to notify the time by the movements of the foot, hand, or other means. BESIDE THE MARK, having nothing to do with the question; irrelevant; eminently unreasonable; out of all reason. UP TO THE MARK, having the proper qualification, as of stature, knowledge, strength, skill, etc.—from the standard mark for the height of recruits.—*SYN.* of 'mark, *n.*': impression; impress; vestige; track; trace; proof; token; symptom; characteristic; badge; indication; brand; butt;—of 'mark, *v.*': to impress; imprint; note; notice; remark; regard; show; heed; point out; indicate; brand; stamp; characterize; evince; betoken.

MARK.

MARK, n. *mârk* [AS. *marc*; Ger. *mark*, a piece of money: Icel. *mork*, a measure, 8 oz. of silver]: the standard weight of the money system of various countries of Europe. In Germany, the M. varied at different times and places; but ultimately the Cologne M. was half a Cologne pound, or 233·8123 grammes; this was the standard till 1857. Since 1871, a new M. is the basis of the new imperial money system: it is 0·358023 grammes of gold, and in silver there are 100 to the pound, or 200 to the kilogramme. The one-mark piece is silver, equal to a shilling sterling (abt. 24½ cents), and is divided into 100 pfennigs: there are gold 5, 10, and 20 mark pieces. The Lubeck M., a coin formerly current at Hamburg, was worth 1s. 2½*d.* (nearly 29½ cents); the *mark banco* there, a money of account, was 1s. 5½*d.* (nearly 35½ cents). In the old French system, the *marc* (= 192 deniers or penny-weights) was half of the *livre poids de marc*, and the latter was 0·4895 of a kilogramme. In England, marks are first heard of in the treaty between Alfred and Guthrum the Dane, and are supposed to have been then a Danish reckoning. The M. was not a coin, but only a money of account, or rather a weight. In 1194 the M. had the nominal value which it ever afterward retained, 160 pennies or 13s. 4*d.*, $\frac{2}{3}$ of the nominal 'pound' (nearly \$3.25). The gold noble, first struck by Edward III., was worth half a M.—6s. 8*d.* (nearly \$1.62½). In Scotland, the M. or *merk* was a weight for gold and silver, or common money reckoning; also a coin. The coin, like the other Scotch coins, had only one-twelfth of the English value: nominally 13s. 4*d.* (nearly \$3.25), it was worth 1s. 1½*d.* English (abt. 27 cents). There were two-merk, one-merk (4½ to the oz.), half, and quarter merk pieces. The M., till lately a standard weight for gold and silver in most European countries, has been generally superseded by the metric system.

MARK, or **JOHN MARK**: one of the four Evangelists (Heb. name *John*, Acts xiii. 5, 13; Lat. surname *Mark*): a Jew; b. probably in Jerusalem (see Acts xii. 12); appears first abt. A.D. 45 in company with Barnabas and Paul. The identity of the John M. of the Acts with the M. of Paul's epistles has been denied by a few distinguished scholars; but the early and increasing verdict of scholars is for the identification. M. was cousin of Barnabas (Col. iv. 10), and accompanied him and Paul on a missionary tour to Antioch, Cyprus, and Perga in Pamphylia, where, leaving them, he returned to Jerusalem; and went afterward to Cyprus, and thence to Rome (Acts xiii.; Col. iv. 10; II Tim. iv. 11). Ecclesiastical tradition speaks of a missionary expedition of M. to Egypt and w. Africa, of his suffering martyrdom about 62 or 66 (the Coptic Church still consider him their founder and first bishop), and of the transmission of his corpse to Venice, which city has chosen him for its patron saint; this tradition mostly lacks authority. The festival (Apr. 25) which the Rom. Cath. Church holds in his honor (the

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day has place also in the calendar of the Prot. Episc. Church) is no older than the close of the 7th. c. M.'s departure from Paul and Barnabas on their tour occasioned a 'sharp contention' between those apostles on a later occasion; and Barnabas 'took M. with him and sailed away unto Cyprus' (Acts xv. 38, 39). But after a few years, and thereafter through Paul's whole apostleship, Paul warmly commends M. as his fellow-laborer in the gospel; and a little previous to his martyrdom asks Timothy to bring M. with him to Rome, 'for he is very profitable to me.' Possibly, Paul may, on further reflection, have thought his first judgment hasty; or possibly M. may have been helped to new steadfastness of purpose by Paul's early rebuke.

M. was doubtless one of Peter's converts (see I Pet. v. 13); and the second Gospel, which has always from the beginning been ascribed to him, has always been understood to have been written under the sanction and guidance of Peter, as was that of Luke under the sanction and guidance of Paul.—See MARK, THE GOSPEL, etc.: GOSPELS.

MARK, THE GOSPEL ACCORDING TO: canonical book of the New Testament; the second Gospel; universally ascribed to the evangelist Mark (q.v.) written according to ancient testimonies, at Rome, in the Greek language. Its date is not known: it was assigned to A.D. 43 by Eusebius; but all that can be asserted with positiveness is that all internal and external evidence points to a date before the destruction of Jerusalem (70). The ending, xvi. 9–20, though certainly very ancient—and probably entirely credible—is no longer generally deemed a part of M.'s original Gospel: it is not in either the Vatican or the Sinaitic manuscripts. This Gospel, which many scholars now deem the earliest written of the New Testament books, is at least the most primitive and direct of the four Gospels in style, method, and material. It was written for Gentile converts.—See MARK (or JOHN MARK): GOSPELS.

MARK AN'TONY: see ANTONIUS, MARCUS.

MARKET, n. *mîr'kēt* [L. *mercātum*, trade, market—from *mercārī*, to traffic: Icel. *markadr*; Ger. *markt*, a market: comp. Gael. *marc*, a horse; *margadh*, a market]: a public place or building for buying and selling; purchase and sale; place or country of sale (also, see FAIRS): V. to deal in a market; to buy or sell. MAR'KETING, imp.: ADJ. bargaining at a market; attendance upon a market. MAR'KETED, pp. MAR'KETABLE, a. -*ā-bl*, fit for the market; saleable. MAR'KETABLENESS, n. -*bl-nēs*, the state of being fit for market. MARKET-BELL, a bell which rings at the opening and close of a market. MARKET-CROSS, the place where a market is held, sometimes marked by an anc. cross. MARKET-GARDENER, one who raises vegetables and fruits for sale. MARKET-OVERT in *law*, an open market. MARKET-PLACE, the place where goods are exposed for sale. MARKET PRIOR

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or RATE, the current price of goods at any given time. MARKET-TOWN, a town having the privilege of holding a market. MARKET-WOMAN, one who attends a market to sell her wares: see MART, and note.

MARKHAM, *mârk'am*, WILLIAM: 1635–1074, June 12: b. England: dep. gov. Penn. and Del. He was cousin of William Penn, who appointed him his deputy in America 1681; selected the site for the present Philadelphia; went to England to represent Penn in his controversy with Lord Baltimore 1683: became sec. of the province of Penn. 1684; dep. gov. of Del. 1691; dep. gov. of Penn. under Gov. Fletcher 1693, and under William Penn 1695; and register-gen. of wills 1703. He was accused by the provincial authorities and by Penn himself of improper official practices.

MARK'ING-NUT: fruit of *semecarpus anacardium*, tree of nat. ord. *Anacardiaceæ*, native of the mountains of India. It is a large tree, with oblong leaves, and terminal panicles of flowers. The fruit is a heart-shaped nut seated on a large swollen receptacle which, when ripe, is roasted and eaten, and resembles a roasted apple, though when raw it is acrid and astringent. The nut is black, and a black acrid juice between the two coats of its shell is used for marking cotton-cloth—a mixture of quick-lime and water being applied to prevent its running and to brighten its color. It is used also as an external application in rheumatism.

MAR'KIRCH: see STE-MARIE-AUX-MINES.

MARL, v. *mârl* [see MARLINE]: among seamen, to wind or twist a small line or rope round another. MAR'-LING, imp. MARLED, pp. *mârl'd*.

MARL, n. *mârl* [mid. L. *margĭla*, marl, a dim. of L. *marga*, marl: Dut. *marghelen*, to fatten land—from *mârgĥ*, marrow: It *marga*, marl: Gael, *mairl*, to crumble, to bruise]: a natural mixture of clay and carbonate of lime in variable proportions, used for the fertilizing of land; a soil that falls readily to pieces on exposure to the air. Marls are found in very different geological formations, but everywhere seem to owe their origin to deposition by water. The name is sometimes applied to friable clays, or mixtures of clay and sand, in which there is almost no trace of lime: but the presence of a notable proportion (6 to 20 per cent.) of carbonate of lime is essential to marls, properly so called. Marly soils are in general of great natural fertility. M. is very advantageously used as a fertilizer, acting both chemically and mechanically; but different kinds of M. are of very different value in this respect: see MANURE. This use of M. has been known from ancient times. An English statute of 1225 gave every man a right to sink a marl-pit on his own ground, and there is other evidence that the application of M. to land was common in England in the 13th c. Old marl-pits are common in parts of England. The quicker action and greater efficiency of lime have

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led to its use in many cases instead of M., though some kinds of M. are extremely useful in some soils. The bulkiness of M. confines its use to the neighborhood in which it is found.—M. is sometimes indurated into a rock, and a slaty variety, containing much bitumen (*Bituminous Marl-slate*), is found in Germany and other countries. MARL, v. to manure with marl. MAR'LING, imp. MARLED, pp. *mârld*, manured with marl. MARLY, a. *mâr'li*, consisting of or abounding with marl. MARLACEOUS, a. *mâr-lâ'shūs*, resembling marl; partaking of the qualities of marl. CLAY-MARL, when the clay predominates. MARL-CLAY, when the lime is most abundant. SHELL-MARL, marl which contains fresh-water shells. MARL-STONE, in *geol.*, the middle member of the Lias formation, consisting of arenaceous shales, laminated sandy limestones, and several bands of stratified and nodular limestone—the whole series being peculiarly rich in fossils.

MARLBOROUGH, *mâr'l'bŭr-ŭh*: city in Middlesex co., Mass.; on the Old Colony r.r.; 15 m. e. of Worcester, 25 m. w. of Boston. It is noted as a centre of boot and shoe manufacture, having 30 factories—one the largest of its kind in the world. It contains a city hall (cost \$87,000), public library, high school, gas and water works, fine soldiers' monument, Lake Williams (130 acres), 8 churches, 2 national banks (cap. \$250,000), savings bank, several machine shops and cigar factories, 3 hotels, and 3 weekly newspapers. The city covers several hills. It was incorporated 1890. Pop. (1870) 8,474; (1880) 10,127; (1890) 13,805; (1900) 13,609.

MARLBOROUGH, *mâr'l'bŭr-ŭh* or *mawl'-*: old and interesting town of England, Wiltshire; a municipal borough and market-town, pleasantly situated in the valley of the Kennet, 75 m. w.s.w. of London. It consists principally of one street of picturesque houses. As early as the days of Cœur-de-Lion, there was a castle at M.; and a parliament, whose enactments were called the 'Statutes of Marlbridge,' was held here in the reign of Henry III. M. trades in coal, corn, and malt. *M. College* was incorporated 1845, and obtained an additional charter 1853; the number of pupils is between 500 and 600, of whom about 70, sons of clergymen, are on the foundation. There are numerous scholarships worth from £15 to £50 annually; and several exhibitions for Oxford and Cambridge Universities. Pop. of town (1881) 3,343; (1891) 3,012.

MARLBOROUGH, *mawl'bŭr-ŭh* or *mawl'b'ro*, JOHN CHURCHILL, Duke of: greatest general and statesman of his time: 1650, June 24—1722, June 16; b. Ashe, Devonshire; of an old family impoverished by the civil wars. Without having received much education, he became a page in the service of the Duke of York, who gave him a commission as an ensign of guards in his 16th year. He was present at the relief of Tangiers, and in a number of engagements with the Moors, and after his return to England, rose to the rank of capt. in a regt.

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sent to the Netherlands to support the French. In the campaign 1672-77, his brilliant courage and ability gained him the praise of the celebrated Turenne. When the war ended by the peace of Nimeguen, Churchill, now a col., returned to England. His advancement had been obtained, not merely on account of his own merit, but through the influence of his eldest sister, Arabella, mistress of the Duke of York. His prosperity was afterward still further secured by his marriage with Sarah Jennings (1660-1744), a lady as remarkable for talents and imperious disposition as for beauty. She became the chosen and most intimate friend of Princess Anne, over whom after her accession to the throne she exercised the influence of a superior and extremely active mind. When James II. ascended the throne, Churchill was made Baron of Sundridge, and raised to the military rank of general. He was active in suppressing Monmouth's rebellion, but on the landing of the Prince of Orange, he unscrupulously passed over to the side of the invader, and was rewarded by being made Earl of Marlborough. He aided in reducing Ireland to subjection; and having received from William III. the command of the troops employed against France in the Netherlands, evinced great ability as a gen. in the campaigns of 1689, 90, and 91. But 1692 he fell into disfavor with the king, and was dismissed from all his offices; and shortly afterward was even thrown into the Tower for a few days on the charge of maintaining treasonable correspondence with the exiled king. On the commencement of the War of the Spanish Succession, he was intrusted with the command of the British army in the Netherlands. The death of William, and the accession of Anne to the throne 1702, Mar., made M. virtually regent, though without the title. His wife governed the queen; her power was almost boundless; the whig ministry depended on her support, and she disposed of places and offices at her pleasure. The duke himself directed the minister Godolphin, whose son had married his daughter. A constant succession of victories strengthened his political power. In the campaign of 1702, he drove the French out of Spanish Guelders, in reward for which service the queen raised him to the rank of duke; and 1703, he campaigned again in the Low Countries. In 1704 he went to the support of the emperor in Germany, and joined Prince Eugene of Savoy; 1704, July, he stormed the French and Bavarian lines at Donauwörth, and Aug. 13, defeated a stronger French and Bavarian army in the memorable and decisive battle of Blenheim (q.v.). The parliament bestowed on him the estate of Woodstock, and the queen caused Blenheim Palace to be built for him, though it had to be finished at his own expense: see **BLENHIM HOUSE**. In 1705, M. was made a prince of the empire. During 1705, M. was occupied chiefly with diplomatic negotiations; but 1706 he resumed that career of victory by which Louis XIV. was so completely humbled. In May of that year, the battle of Ramillies (q.v.) was fought, which com-

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elled the French to evacuate the whole of Spanish Flanders. In the summer of 1708, an attempt made by the French, under Vendome, to recover Flanders, brought on an engagement at Oudenarde (q.v.) July 11, which resulted in the total defeat of the French. 1709, Sep. 11, he fought the fearfully bloody and unprofitable battle of Malplaquet (q.v.); in 1711, his final campaign, he took town after town from the French. Meanwhile, however, important events took place at the British court; the queen shook off the tyranny of the Duchess of Marlborough, which had become intolerable to her; Godolphin and Sunderland ceased to be ministers, and the Earl of Oxford and the Tories came into power. M. was accused of having embezzled the public money, and 1712, Jan. 1, he was deprived of his offices, but the charge against him was not prosecuted. England had become unpleasant to him, and he went to the continent, where he remained till Anne's death, 1714, Aug. 1. On the accession of George I., he was treated with distinction, and made capt.gen. and master of the ordnance. 1716, May 28, he had a stroke of apoplexy, which, though it slightly impaired his speech, did not prevent him from continuing to sit in parliament, and attending to his other duties till six months before his death. He d. at Cranbourn Lodge near Windsor. He left an immense fortune.—M. was unquestionably guilty of political dissimulation, in which respect, however, he was no worse than nearly all the public men of those times; he was inordinately fond of money, and may have been parsimonious. But his character had many elements of singular excellence. He was generous in action, gentle in temper, a faithful husband, and a devout Christian. He was exceedingly courteous and graceful in demeanor, and had great tact in managing men.—His wife, who had been supplanted in the queen's favor by her own cousin, Lady Masham (q.v.), whom she herself had brought to court, retired from the court 1711, Jan. She long survived her husband, living in complete retirement, and died at the age of 84, leaving a fortune of £3,000,000 sterling.—The only son of the Duke and Duchess of Marlborough died young, and the title has been inherited by the descendants of one of their daughters.

MARLINE, n. *mâr'lin* [Dut. *marlen*, to marl, to fasten the sail to the bolt-rope: Dut. *marlyn*: F. *merlin*, marline: Dut. *marren*, to lie, to moor]: small rope of two loose strands either tarred or white, used for twisting or winding round rope: V. to wind marline round a rope or cable to prevent its being fretted by the blocks, etc. MARLINE-SPIKE, or MARLING-SPIKE, ponderous iron pin with a large head and a taper point, used on shipboard for separating the strands of rope preparatory to splicing or knotting; also as a lever in tightening rigging, etc.

MARLOW, GREAT: see GREAT MARLOW.

MARLOWE—MARMAROS.

MARLOWE, *mâr'lo*, CHRISTOPHER (familiarily *Kit Manlowe*): English dramatic writer; 1564, Feb.—1593, June 1; b. Canterbury. Little is known of the events of his life. He studied at Corpus Christi College, Cambridge, and took the degree of Master of Arts 1587. After leaving the university he went to London, and wrote for the stage. His chief works are *Dr. Faustus*, *Edward II.*, *Tamburlaine the Great*, and two cantos of *Hero and Leander*, a narrative poem, afterward completed by Chapman. He appears to have led a reckless life; and perished in a tavern brawl, it is supposed by the hand of a jealous rival. He was violently accused as a free-thinker, and even atheist.

Of all the dramatic writers before Shakespeare, he was the greatest genius; indeed, his *Edward II.* may be considered a foreshadow of Shakespeare's historical dramas. Some eminent critics even deem M. the principal author of the second and third plays which appear among the works of Shakespeare under the title *King Henry VI.* His 'mighty line' has been the subject of much critical laudation. His imaginative force and splendor are at their best in *Faustus*; his delicacy and sweetness in *Hero and Leander*. An edition of his works, with a Life and a literary-historical Introduction, was published by Dyce 1859; another by Col. Cunningham 1872.

MARMALADE, n. *mâr'mă-lăd* [F. *marmelade*; Port. *marmelada*—from Port. *marmelo*, a quince—from mid. Lat. *malomellum*, Gr. *melimelon*, honey-apple or sweet apple]: semi-liquid preserve, made by boiling the pulp of thick rinded fruits, such as oranges, pine-apples, quinces, etc., with portions of the rind. The most common M. is made from the bitter or Seville oranges, the common or sweet sorts being considered inferior for this purpose, though also occasionally used. The mode of preparing it is generally as follows: the rind is boiled by itself, and the white woolly coating on the interior being then removed, the rind is cut into thin strips, and boiled with the expressed juice of the pulp and a quantity of sugar equal in weight to the other ingredients. After the mixture has attained proper consistence, it is treated similarly to jam, jelly, and other preserves: see **JAMS AND JELLIES**. A species of M. is commonly made in France from apricots, peaches, plums, pears, etc.

MARMANDE, *mâr-möngd'*: old town of France, dept. of Lot-et-Garonne, on the right bank of the Garonne, 50 m. above Bordeaux. An important general trade is carried on with Bordeaux, with which M. is in daily communication by steamboat. The people manufacture hats, woolen stuffs, brandy, etc. Pop. (1881) 6,694.

MARMAROS, *mâr-mö'h-rösh'*: co. in n.e. Hungary; bounded n. by Galicia, e. by Bukowina, s.e. by Transylvania, and s. and w. by the cos. of Bereg, Ugocsa, and Szatmár, 3,998 sq. m.; cap. Sziget. It is bordered n. and n. e. by the Carpathian Mountains, and watered chiefly

MARMOLITE—MARMONTEL.

by the Black Theiss and White Theiss rivers. Diamond, salt, iron, lead, alabaster, and coal mines abound, marble quarries and mineral springs are numerous; and gold has been found in several localities. There are vast tracts of forest, chiefly oak; and sheep and horses are bred extensively. The agricultural products are confined mainly to maize. Pop. (1870) 220,506; Ruthenians 100,000, Wallachs 50,000, Jews 20,000, Magyars 15,000, Germans 3,000.

MARMOLITE, n. *mâr'mō-līt* [Gr. *marmairō*, I shine; *lithos*, a stone]: a variety of foliated serpentine of a pale-green, yellow, or light-gray color.

MARMONT, *mâr-mōng'*, AUGUSTE FRÉDÉRIC LOUIS VIESSE DE, Duke of Ragusa and Marshal of France: 1774, July 20—1852, Mar. 2; b. Châtillon-sur-Seine. He entered the army at an early age, served as brig.gen. in Egypt, returned with Bonaparte to France, supported him in the revolution of the 18th Brumaire, and continued in active military service. Having defended the Ragusan territory against the Russians and Montenegrins, he was made Duke of Ragusa. He joined the great army 1809, the day before the battle of Wagram, was intrusted with the pursuit of the enemy, won the battle of Zuaym, and was made a marshal. He was thereafter for 18 months gov. of the Illyrian provinces; and 1811 succeeded Massena in chief command in Portugal, where he assumed the offensive, caused the siege of Badajoz to be raised, and kept Wellington in check 15 months. A wound compelled him to retire to France. In 1813, he commanded a *corps d'armée*, and fought at Lützen, Bautzen, and Dresden. He maintained the contest with great spirit in France in the beginning of 1814; and it was not until further resistance was hopeless, that he concluded a truce with Barclay de Tolly, on which Napoleon found himself compelled to abdicate. The Bourbons loaded M. with honors. On the return of Napoleon from Elba, he was obliged to flee. After the second restoration, he spent much of his time in agricultural pursuits, till the revolution of 1830, when, at the head of a body of troops, he endeavored to reduce Paris to submission, and finally retreating with 6,000 Swiss, and a few battalions that had continued faithful to Charles X., conducted him across the frontier. From that time, he resided chiefly in Vienna. In 1852, he engaged in an effort for the fusion of the French Legitimists and Orleanists, but died at Venice early in that year, last survivor of the marshals of the first French Empire.

MARMONTEL, *mâr-mōng-tě'*, JEAN FRANÇOIS: elegant French writer: 1723, July 11—1799, Dec 31; b. Bort, in the Limousin; of an obscure family. He studied for the priesthood, but turned aside to literature, and after obtaining reputation in Toulouse as a poet, he went to Paris on invitation from Voltaire 1746. Here he wrote tragedies and operas with no great success, but was fortunate enough to get a secretaryship at

MARMORA—MARMOSET.

Versailles, through the influence of Madame Pompadour, 1753. Afterward, he received a more lucrative appointment, the *Mercur* being intrusted to his charge. His *Contes Moraux* (2 vols. Par. 1761), part of which appeared originally in the *Mercur*, have been translated into many languages, but are liable to the charge of monotony. He wrote other works, the most celebrated of which is his *Bélisaire*, political romance, containing a chapter on *toleration*, which excited the most furious hostility on the part of the doctors of the Sorbonne. The book was condemned as 'heretical and blasphemous,' the clergy declaimed against it from the pulpits; the city was in a ferment; even the wise Turgot was borne away by the current. Pamphlets, epigrams, caricatures, appeared in great numbers. There was a contest between the philosophers and wits on the one hand, and the theologians on the other; but the latter were defeated, and M. was named historiographer of France. In 1787, appeared *Eléments de Littérature*, consisting of his contributions to the *Encyclopédie*, in which he had charge of the departments of poetry and general literature. It is really his best book, and the one on which his reputation most securely rests. After the Revolution, he retired from the Reign of Terror to the village of Abloville, near Evreux; and d. near Gaillon, dept of Eure. An ed. of his *Œuvres Complètes* was published by himself, 17 vols.; another, 18 vols. (Par. 1818); a third, 7 vols. (Par. 1819-20).

MARMORA, *mâr'mo-ra*, THE SEA OF (the *Propontis* of the ancients): small sea between European and Asiatic Turkey, communicating with the Ægean Sea by the Strait of the Dardanelles (q.v.—anciently *Hellespont*), and with the Black Sea by the Strait of Constantinople or the Bosphorus (q.v.) or Bosphorus. It is of oval form, about 135 m. in length by 45 in breadth, but has besides a large gulf, the Gulf of Isikmid or Ismid, which extends about 30 m. e. into Asia. The depth is great. There is a current from the Bosphorus through it and the Hellespont to the Archipelago; but its navigation is not difficult. It contains many islands, of which the largest is Marmora or Marmara, famous for quarries of marble and alabaster. The scenery around the Sea of M. is soft and beautiful.

MARMORACEOUS, a. *mâr'mō-rā'shūs* [L. *marmor* or *marmōrem*, marble]: pert. to or like marble. MAR'MORATE, a. *-rāt*, inclosed in marble; marbled. MAR'MORATUM, *-rāt'lūm* [L. incrustated with marble]: a cement or plaster of marble-dust and lime.

MARMOSE, n. *mâr'mōs*: an animal resembling the opossum, but less in size.

MARMOSET, n. *mâr'mō-zèt* [F. *marmouset*, a queer little figure, a little monkey—from mid L. *marmōrētūm*, made in marble—from L. *marmor*, marble, later a little marble figure also: *marmoretum* was applied to the spouts of cisterns and drinking-fountains generally formed in grotesque marble figures]: term applied to a number of spe-

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cies of small and beautiful S. Amer. monkeys of genera *Hapale* and *Jacchus*, called also OUISTITI; also sometimes to species of the genus *Midas* of naturalists. They all are distinguished from the other American monkeys by the smaller number of their grinders, resembling in this the monkeys of the old world, also by the sharpness and crookedness of their nails. They depart from the true quadrumanous character in having the thumb not opposable. The tail is very long, and thickly covered with hair, but not prehensile. They have a very affectionate



Marmoset, or Striated Monkey (*Hapale Jacchus*).

disposition; but unhappily all of them prove very delicate when removed from a warm climate. The name M. is sometimes restricted to the species called also the STRIATED MONKEY, or STRIATED OUISTITI (*Hapale Jacchus*, or *Jacchus vulgaris*), native of Guiana and Brazil, a species often brought to Europe, and a favorite pet whenever it can be obtained. It is about seven or eight inches long, exclusive of the tail, which measures a foot. Its fur is long and soft, of fine dark gray or reddish-yellow color, banded with black; a long tuft of white hairs on each side of the black head.

MARMOT, n. *mâr'môt* [F. *marmotte*—from It. *marmotto*], (*Arctomys*): genus of rodents, ranked usually among the *Muridæ*, but regarded as a connecting link between that family and *Sciuridæ*; resembling squirrels in their dentition, though in form and habits they more resemble rats and mice. They have two incisors and two premolars in each jaw, four molars on each side above and three below.—The COMMON M., or ALPINE M. (*A. alpinus*), is a native of the Alps, the Pyrenees, and the northern mountains of Europe, up to the limits of perpetual snow. It is about the size of a rabbit, grayish yellow, brown toward the head. It feeds on roots, leaves, insects, etc.

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It is gregarious, and often lives in large societies. It digs large burrows with several chambers and two entrances, generally on the slopes of the mountains, where



Marmot (*Arctomys alpinus*).

the marmots may be seen sporting and basking in the sunshine during the fine weather of summer. They spend the winter in their burrows, in one chamber of which is a store of dried grass; but the greater part of the winter is passed in torpidity. The Alpine M. is easily tamed. The Prairie Dog (q.v.) is allied to it; also the Woodchuck (q.v.) The QUEBEC M. (*A. empetra*) found in Canada and the more n. parts of America, in woody districts, is a burrowing but not a gregarious animal.

MARNE, *mârn*, river of France, *Matrôna* of the ancients, the most considerable tributary of the Seine, on the right. It rises in the plateau of Langres, flows through the depts. of Haute-Marne, Marne, Aisne, and Seine-et-Marne, in a course at first n.w., then w., with many windings; passes Chaumont, Joinville, St. Dizier, Vitry, Châlons, Epernay, Château-Thierry, and Meaux; and joins the Seine at Charenton, about four m. above Paris. Its length is about 205 m., and it is navigable for 140 m. It is a rapid stream, in most places with a wide bed. Its commerce has been extended by canals; the most important, completed 1851, connects it with the Rhine.

MARNE: inland dept. in n.e. France, formed out of the old province of Champagne; traversed by the river Marne, and extending s. from the frontier dept. of Ardennes; 2,021,488 English acres, of which 1,519,320 acres are cultivable and 45,704 in vineyards. The soil is very fertile in the s., but chalky and arid in the north. In the dry and chalky soil of the n. of this dept. the best varieties of the famous Champagne (q.v.) wine are grown: 15,318,345 bottles of champagne were exported 1875. Of wines of all kinds, about 15,400,000 gallons are produced annually. The rearing of a Spanish breed of sheep is a chief industry, and woolen manufacture is extensive. The dept. is divided into the 5 arrondissements, Châlons-sur-Marne, Epernay, Reims, Sainte-Ménéhould, Vitry-le-François.; cap., Châlons-sur-Marne. Pop. M. (1881) 421,800; (1891) 434,692; (1901) 432,882.

MARNE—MARONITES.

MARNE, HAUTE: inland dept. in n.e. France, s.e. of the dept. of Marne; 1,545,460 acres. The surface is generally hilly, and mountainous in the s. and east; more than one-half is cultivable, and about one-third is in forests. The principal rivers are the Marne, with its tributaries, and the Meuse. About 13,000,000 gallons of wine of ordinary quality are produced. The dept. is rich in iron ore; there are numerous furnaces, and the production of iron is the principal industry. There are three arrondissements, Chaumont, Langres, and Vassy; cap. Chaumont-en-Bassigny.—Pop. of dept. (1881) 254,876; (1891) 243,533; (1901) 226,545.

MAROCCO: see **MOROCCO**.

MAROCHETTI, *mâ-ro-kět'tē*, **CARLO**, Baron, Chevalier of the Legion of Honor: Italian sculptor: 1805–67; b. Turin. After primary studies at the Lyceum Napoléon, he entered Bosio's studio; and after a tour through Italy, he took up his abode in France 1827, and received a medal the same year for his beautiful statue *A Young Girl Sporting with a Dog*. In 1831, he exhibited the *Fallen Angel*. On the outbreak of the Paris revolution of 1848, M. went to reside in London, where he met splendid encouragement from the public and a host of royal and noble patrons. Among his best works are an equestrian statue of Emmanuel Philibert, executed gratuitously for his native city of Turin; the tomb of Bellini, in Père la Chaise; grand altar in the Madeleine at Paris; statues of the Emperor, the Duke of Orleans, and Queen Victoria; colossal figure of Richard Cœur-de-Lion, exhibited at the portal of the Crystal Palace. One of his last works was a statue of Lord Clyde in Waterloo Place, London.

MARONE, n. *ma-rōn'* [from *maroon*, a color]: one of a class of impure colors, composed of black and red, black and purple, or black and russet pigments, or with black and any other denomination of pigments in which red predominates. **MARONE' LAKE**, a preparation of madder, of great depth, transparency, and durability of color.

MARONITES, n. plu. *mār'ō-nīts*: a Christian tribe of the Lebanon, Syria, of very ancient origin, regarding which considerable controversy has arisen. The most probable account represents them as descendants of a remnant of the Monothelite sect (see **MONOTHELISM**) who, fleeing from the repressive measures of Emperor Anastasius II., early in the 8th c., settled on the slopes of the Lebanon, their chief seats being around the monastery of Maron, a saint of the 5th c., whose life is found in Theodoret's *Religious Histories* (iii. 1222). The emigrants are said to have elected as their chief and patriarch a monk of the same name (Maron—from whom, it is thought, they were named), with the title Patriarch of Antioch, and throughout the political vicissitudes of the succeeding centuries, to have maintained themselves in independence among the Moslem conquerors. In the

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12th c., on the establishment of the Latin kingdom of Jerusalem, the M. abandoned their distinctive monothelite opinions, and recognized the authority of the Roman Church. Again, in the Council of Florence, 1445, they entered into a formal act of union with Rome. In 1584, a college was founded in Rome for the education of the Maronite clergy; and 1736, they formally subscribed the decrees of the Council of Trent. Nevertheless, though united with Rome, they are permitted to retain their distinctive national rites and usages. They administer communion in both kinds; they use the ancient Syriac language in their liturgy; their clergy, if married before ordination, are permitted to retain their wives; and they have many festivals and saints not recognized in the Roman calendar. The M. at present are about 150,000 in number, distributed into 150 parishes. Their patriarch is still styled Patriarch of Antioch, and resides in the convent of Canobin on the Lebanon. He acknowledges the supremacy of the pope, and is bound to lay before him every tenth year a report of the state of his patriarchate. Under him are 17 bishops, to whom are subject the officiating clergy of the 150 districts alluded to above. The revenues of all orders of ecclesiastics, however, are very narrow, and the inferior clergy live mostly by the labor of their hands. The numerous convents for both sexes contain 20,000 to 25,000 members, who all wear a distinctive costume, but follow the rule of St. Anthony. The chief seat of the M. is the district called Kesrawan, on the w. the declivity of Mount Lebanon; but they are scattered over the whole territory of the Lebanon, and in all the towns and larger villages toward the n. in the direction of Aleppo, and s. as far as Nazareth. Their political constitution is a kind of military republic, regulated for the most part by ancient usages and by unwritten, but well-recognized laws. Like the Arabs of Syria, they have a political hierarchy, partly hereditary, partly elective. The chief administration is vested in four superior sheiks, who possess a sort of patriarchal authority; and under these are subordinate chiefs, with whom, as in the feudal system, the people hold a military tenure. They retain even still a custom similar to that of the Sardinian *vendetta*, by which the kindred of the slain are bound to avenge his death. For relations of the M. with the Druses, see DRUSES. By an arrangement adopted since the recent sanguinary conflicts, both populations alike are subject to one gov. appointed by the Porte as gov. of the Lebanon.

MAROON, a. *ma-rôn'* [F. *marron*, chestnut-colored—from *marron*, a large French chestnut: It. *marrone*, the largest kind of chestnut]: brownish crimson; of a claret color.

MAROON n. *mă-rôn'* [F. *marron*—from Sp. *cimarron* or *simaron*, a runaway slave—probably from *sima*, a cave or from *cima*, mountain top]: name given in Jamaica and Dutch Guiana to runaway negro slaves, or slaves who take

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to the woods. The term was applied first to slaves deserted by their masters, the Spaniards, when the British conquered Jamaica (1655), and who took refuge in the uplands, where for 140 years they maintained constant warfare with the British colonists; but 1795 they were subdued, and a portion of them removed to Nova Scotia, and afterward to Sierra Leone. The remnant fraternized with their manumitted brethren in 1834-5. M. is now almost a proper name for the descendants of these early fugitive negroes. The M. of Dutch Guiana form a number of small independent communities. MAROON, *v.* to put a sailor ashore on a desolate island by way of punishment. MAROON'ING, *imp.* MAROONED', *pp.* -rônd.

MAROS-VASARHELY, *môr'ôsh-vâ'shâr-hěly'*: market-town of Austria, in Transylvania, in a fruitful district, on the Maros river (350 m. long, tributary of the Theiss), 55 m. n.n.e. of Hermanstadt. It contains a strong castle, a beautiful Gothic church (Reformed); other churches, Rom. Cath. and Greek orthodox, a Calvinistic college, and a public library of 80,000 vols. Tobacco, wine, and fruit are extensively grown. Pop. (1880) 12,883.

MAROT, *mâ-rô'*, CLEMENT: earliest of the distinctively modern French poets, an important figure in French literature: 1496 (or 7)—1544; b. Cahors; of a Norman family. He entered the service of Francis I.; and 1519 was attached to the suite of Margaret d'Angoulême, the king's sister. In the battle of Pavia he was wounded and taken prisoner, but on his return to Paris became a member of the royal household. Imprisoned once as a Prot. heretic, and coming again into serious risk, he fled to Navarre and to Italy; returning, he had to flee finally 1543. Being as much a freethinker as a Calvinist, he found no shelter in Geneva, whither first he betook himself, and went to Turin, where he died. His early poems are stiff; his later ones are almost unsurpassed for ease and grace, in which qualities his only rival is La Fontaine. He wrote many rondeaux, epigrams, epistles, and ballads; also the poem *L'Enfer*. His famous translation of the Psalms in poetry—superior to the inadequate French prose translation of the Scriptures at that time—did much to promote the Reformation, and was sung at the court, and was widely popular in the country.

MAROZIA, *mâ-rôt'se-â*: Roman lady; b. near the close of the 9th c.; d. 938; of noble family, but of infamous reputation in the scandalous chronicles of her age, daughter of the equally notorious Theodora. At the time of the dissolution of all the moral ties of public and private life which the war of factions occasioned in Rome, in the 10th c., M., by her beauty and her intrigues, contrived to exercise great influence. She was married three times, and, if we may credit the narrative of Luitprand, had skill and address enough to procure the deposition and death of the pope, John X., and the elevation of her son, the fruit, it is alleged, of adulterous intercourse, to the pontificate, under the name of John XI. This, however,

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rests on the testimony of Luitprand, who wrote some time after the period, and whose authority is considered more than doubtful, not merely by Muratori, but also by critical and unbiassed writers. M.'s later years brought on her the punishment of her crimes, and she died in prison at Rome.

MARPLOT, n. *mâr'plôt* [*mar*, and *plot*]: one who spoils or mars a design by an officious interference or meddling.

MARQUE, n. *mârk* [OF. *marque*, a boundary, a catching within one's borders—from *marquer*, to catch within one's borders, to pillage: mid. L. *marcha*; F. *marque*, the authority given by a prince to any of his subjects to do himself right in a border quarrel by seizing the property or persons of the countrymen of the wrong-doer (see MARCHES)]: now used only in LETTERS OF MARQUE, a license or commission granted by a sovereign to the commander or owner of a private vessel in time of war to seize the ships of his enemy; the ship so commissioned is usually called a *privateer*: see LETTERS OF MARQUE.

MARQUEE, n. *mâr-kê'* [F. *marquise*, the tilt over a tent]: a large field-tent; *literally*, the tent of the *marquis* or *marchioness*.

MARQUESAS ISLES, *mâr-kâ'sâs*, or MENDANA ISLANDS, *mên-dân'yâ* (French, *Les Marquises*): group of five islands in Polynesia touched by the meridian of 140° w. The name strictly applies to four or five islands discovered by Alvaro Mendaña 1595, and called Marquesas after the viceroy of Peru, the *Marquis de Mendoza*; but usually includes now also the Washington group of seven islands, to the n. west; whole extent s.e. to n.w. more than 200 m.; 489 sq. m. The whole archipelago is volcanic, and covered with verdure. The climate is hot and moist, but healthful. The flora resembles in general that of the Society Islands. The natives are a handsome race, belonging to the brown Polynesian stock, and are courteous, lazy, excitable, and revengeful. The principal island of the M. proper is Hiva-oa, 22 m. long, 10 m. wide. Since 1842 the islands have been under a French protectorate little more than nominal. Pop. said to have been 20,000, has fallen to about 6,000.

MARQUESS, n. *mâr-kwēs* [F. *marquis*]: now a common spelling of MARQUIS, which see.

MARQUETRY, n. *mâr-kêt-ri* [F. *marqueterie*—from *marqueter*, to checker, to inlay—from *marque*, a mark]: ornamental inlaid work on wood; kind of mosaic—also the art of making it—executed in hard and curiously grained wood, and other material, inlaid and arranged in great variety of patterns: see BUHL: INLAYING: MOSAIC.

MARQUETTE, *mâr-kêl'*: city, cap. of Marquette co., Mich.; on Lake Superior and the Marquette Houghton and Ontonagon railroad; 425 m. n. of Chicago. It is on a bluff 25 ft., above the lake, and contains 7 churches, graded public schools, opera house, public library, three

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public halls, Rom. Cath. cathedral and convent, Holly water works, 1 national bank (cap. \$100,000), 1 private bank, and several weekly newspapers. It has a fine harbor, and steamer communication with the principal lake ports. It is on the great Marquette iron range, the richest in the entire Lake Superior iron district, which shipped 946,763 tons of ore 1886; 1,090,103, 1887; 950,305, 1888; and 1,915,000, 1889. There are valuable slate and brown stone quarries. Pop. (1870) 4,000; (1880) 4,690; (1884) 5,690; (1890) 9,093; (1900) 10,058.

MARQUETTE, *mâr-kêl'*, JACQUES: 1637–1675, May 18; b. Laon, France. At 17 he entered the Society of Jesus; 1666, was ordained priest and sailed for Canada as missionary, landing at Quebec; spent more than a year near Three Rivers learning several Indian languages. 1668, Apr., he met some Indians at Montreal with whom he went to Lake Superior and founded the mission of Sault Ste. Marie; 1669, he was ordered to La Pointe, to take the place of Allouez there. Thence he went with his Hurons to Mackinaw where, 1671, he built a chapel. In 1673, he went with Louis Joliet (q.v.) and five Frenchmen, to explore the course of the Mississippi, starting from Green Bay in two canoes, down the Wisconsin, and then down the Mississippi to within two or three days' journey from its mouth, when fear of the Spanish caused them, July 17, to start on their homeward journey. They passed up the Illinois r, instead of the Wisconsin, and arrived home at Green Bay, 1674, Sep., having travelled 2,500 m. in their open canoes. 1675, Mar. 30, after untold hardships on the journey, he reached Kaskaskia, Ill., and established a mission there. Conscious of his approaching end, he soon set out on his return, intending to go back to Mackinaw; but he came no further than the small river whose mouth is on the e. shore of Lake Michigan, and which is named after him; there he died in presence of his two French companions; and there they buried him, erecting a bark cabin over the grave. In 1677 his body was taken to Point St. Ignace, Mich., and buried under the floor of the chapel there, where it lay forgotten until discovered, 1877, by a clergyman of Eagle Harbor, Mich.

MARQUIS, n. *mâr'kwis*, or MARQUESS, *-kwēs* [F. *marquis*—from OF. *marchis*—from mid. L. *marchensis*, a governor set over the marches or frontiers of the empire—from mid. L. *marcha*; OHG. *marcha*, a march, a boundary. It; *marches*: comp. Ger. *markgraf*, originally count of the *marches* or border territories]: title and rank of nobility second in the English peerage, being next below that of duke: fem. MARCHIONESS. Marquises were originally commanders on the borders or frontiers of countries, or on the sea-coast, which they were bound to protect. In England, the title was used in this sense as early as the reign of Henry III., when there were marquises or lords-marchers of the borders of Scotland and Wales; and the foreign equivalent *Markgraf*

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was common on the continent. The first English M. in the modern sense was Robert de Vere, Earl of Oxford, who was created M. of Dublin by Richard II., to the no small offense of the earls who had to yield him precedence. The oldest existing marquissate is that of Winchester, created by Edward VI. 1551. The title was introduced into Scotland 1599, when the Marquises of Huntly and Hamilton were created.—The coronet of a marquis, in the United Kingdom, is a circle of gold, with four strawberry leaves (or oak leaves), and as many pearls alternating with them, and placed on pyramidal points of the same height with the leaves. The mantle is scar-



let, with three and a half doublings of ermine. A M. is styled 'The Most Honorable;' his wife is a marchioness; his eldest son takes by courtesy the next lower title in the peerage, except where that is identical with the title of the marquissate, in which case he

Marquis's Coronet. must take the next lower still, as in the case of the Marquis and Earl of Salisbury, whose eldest son bears the courtesy-title Vi-count Cranborne. The younger sons of a marquis are styled 'Lord,' and daughters 'Lady,' with the addition of Christian name and surname. MAR'QUISATE, n. *-kwiz-āt*, the dignity or lordship of a marquis.

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MARRIAGE, n. *mǎr'rij* [F. *mariage*, marriage—from mid. L. *maritalicūm*; F. *mari*; L. *marītus*, a husband (see **MARRY**)] : the contract or ceremony by which a man and woman become husband and wife; wedlock, the state created by the marriage contract. **MARRIAGEABLE**, a. *mǎr'rij-ǎ-bl*, of an age suitable for marriage. **MAR'RIED**, a. *-rīd*, united in marriage; wedded. **MARRIED WOMAN** : see **HUSBAND AND WIFE**. **SYN.** of 'marriage' : wedding; nuptials; matrimony.

MARRIAGE : union of a man and a woman in the legal relation of husband and wife—including both the act that creates the union, and the union itself as the resulting state. This in one form or another is the oldest institution of society and the source of its most ancient laws. Society indeed could not long exist without some rules imposed by necessity for the appropriation of men and women to one another, securing them in the enjoyment of one another's society, and defining their obligations to their children. According to the law or practice of the greater part of the civilized world, one man marries one woman at a time—which Christ declares to be according to the fundamental law of God given in the institution of M. at the creation of man. This reference of M. to the highest conceivable origin, which has an essential relation to the characteristically Christian purification of it, the Apostle Paul develops for guidance in the practical duties of the wedded state—bringing to light the formative principle of wedlock as the great earthly symbol of the sacred 'mystery' of the union of the Son of God with humanity : 'For this cause (i.e., since the Son of God left the Father that He might join Himself with our flesh) shall a man leave his father and mother, and shall cleave to his wife ; and the twain shall become one flesh' (see Eph. v. 22-33 ; also Gen. ii. 18, 24 ; Matt. xix. 5, 6 ; Mk. x. 7, 8 ; Col. iii. 18, 19). The Mormon heresy on this subject is now being suppressed by statute. But this familiar system of monogamy is a comparatively recent development of marriage. With those who reject the Christian records, a great diversity of opinion exists as to the particular form of primitive marriage. It is conceivable that many forms may have very early been introduced. Polygynia and polyandria—one man with many wives, one wife with many husbands ; these have certainly existed. By a recent writer on the subject (Morgan, *Systems of Consanguinity and Affinity*, 1871 ; and *Ancient Society*, 1877) it is asserted that intercourse was originally promiscuous. This negation of M. is vehemently disputed, and with excellent reason. Morgan also affirms a primitive custom of intermarriage between brothers and sisters ; the consanguine family of the Malay civilization ; and a custom of intermarriage of several sisters with each other's husbands, and of several brothers with each other's wives. This custom is said to result in the formation of a *gens*, governed in its marriage relations by the principle of exogamy—viz., selection of wives out-

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side the *gens*: after this comes the marriage of single pairs with or without exclusive habitation. It is more accordant with such evidence as is possessed to speak of these related customs as ancient; it is impossible to prove the earliest of them primitive, i.e., the original custom. The patriarchal family was largely polygamous; and after that period true monogamy does not appear in any general development before the rise of private property, lineal succession, and slavery. (See on this subject, M'Lennan, *Primitive Marriage*, 2d ed.; Tylor, *Early History of Mankind*; Lubbock's *Origin of Civilization*; Bachofen, *Das Mutterrecht*.) The primitive ceremonies of M. are of immense number, and some of striking beauty: those which have left the most distinct survivals in modern custom are sale and capture. As regards Christian Europe, in 1085 Hildebrand declared M. a sacrament of the church; and at the Reformation, Calvin declared it an institution of God. The school of Grotius described it as a contract of partnership. Throughout Christendom, M. is generally accompanied by a religious ceremony. In the eye of the law, even where the intervention of a minister of religion is on public grounds declared essential, M., considered as the act that forms the union, is a contract. The varieties of M. as a modern legal institution are well summarized in Bergson's Introduction to *Concordance entre les Codes Civils* (Paris 1856.) While the law thus deals with M. as a contract, there has been and is much controversy whether it is really a contract; and if so, then of what class of contracts. For though consent of the parties—one chief element in all contracts—is universally a requisite to a legal M., yet all the incidents of the condition which the act of consent constitutes are fixed by positive law. Some confusion of thought may be due to the use of the term M. to denote both the contracting act and the *status* which that act creates. In the United States, on the ground that the constitution forbids any state from 'impairing the obligation of contracts,' it has been decided that M. is not a contract within the meaning of the constitution. The peculiar relation of the states to the federal government occasions difficulty at this point (see Bishop, *Marriage and Divorce*). The law, leaving the question open whether M. is only a contract, or a contract and more—also the question whether it is a merely civil act or a combined civil and religious act—deals with it only practically as it creates the legal status of husband and wife. It has been pointed out, however, that though M. is legally termed a contract, it is invariably distinguished from all other contracts, e.g., that of master and servant, landlord and tenant; inasmuch as that in all the others the parties assign rights and duties generally at their own choice, while in M. the law determines all the rights and duties which are elements in the new relation formed.

For rights, duties, disabilities, and liabilities pertaining to M.—also for its effect on property rights, see

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HUSBAND AND WIFE: for rights connected with the dissolution of M., see **DIVORCE: JUDICIAL SEPARATION.**—Various modes of constituting M. are now to be indicated.

England.—To insure deliberation and to preserve indisputable evidence of so important a fact, English law makes certain forms essential to marriage. A breach of the contract to marry gives rise to an action of damages (though this remedy is being gradually condemned by public opinion); but M. itself will not be set aside and treated as null merely because either party procured it by fraudulent representations. M. cannot be rescinded by either party or both at pleasure, though that effect is brought about in another way by certain kinds of misconduct, whether studied or not, of either party; see **DIVORCE: JUDICIAL SEPARATION.** Another feature in which M. differs from other contracts is, that it cannot be entered into in a moment, but certain preliminary notices must be given, and forms gone through. Since 1836 persons have the option of two forms of contracting M.: it may be with or without a religious ceremony; and if with a religious ceremony, it may be either in the established church or in a dissenting chapel. If the M. is to take place in an established church, there must be publication of banns of M. for three preceding successive Sundays, either after the Second Lesson or during the communion office; but a M. license obtained from the ordinary of the district, or a special license from the archbishop, will dispense with banns; 15 days' previous residence in the parish by one of the parties being necessary. A registrar's certificate, obtained on seven days' residence and 21 days' notice, also will dispense with banns, but an established church clergyman is not bound to marry on this. The M. must take place in the church, the M. service of the Church of England being read over, and this must be done in canonical hours—i.e., between 8 and 12 A.M., in presence of two witnesses. If the M. is celebrated in a dissenting chapel (and for that purpose such chapel must be duly licensed and registered) a certificate or license must be got after notice from the registrar; and there must be present the registrar of the district as one of the witnesses, except in Quaker and Jewish marriages. If the M. is not with any religious ceremony, it must take place in the office of the supt.-registrar, and in presence of witnesses; both parties in the presence of witnesses there exchanging a declaration that they take each other for man and wife. The canonical hours must be attended to in all cases. The omission of any of these requisites with the knowledge of the parties, makes a M. void. It is felony to celebrate a M. in a private house, unless by special license from the archbishop. And in all cases the fact of the M. must be entered in a church register, also in a civil register; the latter being ultimately filed and kept in Somerset House, London, where a copy of the certificate of registration can be had for a small sum. The guilt of perjury is incurred by making or signing a false declaration on giving notice to

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the officer. In the case of the M. of an infant—i.e., a person under 21 years of age—evidence of the consent of parents or guardians has to be produced to the registrar or other officer: there are penalties for false representation as to such consent; but the lack of consent of parents or guardians does not make a M. null. It may sometimes happen that persons go through the form of M. and yet are not married; as where one of the parties is already married, the spouse being alive. In such case, it is quite immaterial whether the party so re-marrying is really ignorant that his or her spouse is alive, provided the spouse is living; for though, after seven years, if nothing has been heard of one of two married parties, the other will escape the penalties of bigamy on marrying again, yet it depends entirely on whether the first spouse is really dead at the time, whether the second M. is valid. Other instances where the M. is void, though the ceremony is complete, are where the persons are related to each other within the forbidden degrees of consanguinity and affinity; where either of them is under age, or of unsound mind, or physically disqualified. As regards members of the royal family (except the issue of princesses married into foreign families), they must either get the sovereign's consent, or give 12 months' notice to the privy council, subject to objection from both houses of parliament. M. betwixt a divorced party and the adulterer is lawful in England. But no clergyman of the established church can be compelled to marry any person whose previous M. has been dissolved on the ground of adultery.

The marriages of Quakers and Jews are subject to a peculiar legislation. They need not be in a registered building, and the registering officer of the Quakers, or the sec. of the Jewish synagogue, is authorized to be present instead of the registrar.

Scotland.—In Scotland, the principle of the civil law, *consensus non concubitus facit matrimonium*, has been adopted; and this consent can be proved either by a regular ceremony *in facie ecclesiæ* publicly recorded, or in three other modes known to the law. The chief impediments to this consent are nonage, insanity, impotency, relationship within the prohibited degrees, subsisting M., and adultery in the case of the adulterers. Also, if force has been used; or where an error as to the woman's chastity has been caused by her misrepresentation or concealment; or a mistake of personal identity occurs; or where a fraudulent conspiracy has been formed, the M. is null. The three other modes above referred to, for proving consent, beside that of the regular ceremony, are known as irregular marriages: they are constituted by a consent, which is proved by a written or verbal declaration of interchange of consent *per verba de præ-senti*; or by a promise to marry, on the faith of which intercourse has followed (these facts, according to one opinion, requiring to be proved by a decree of declarator); or by cohabitation and habit and repute.

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Proclamation of the banns in the parish church is required for regular M.; though, by certain formalities, a certificate may be procured from the registrar which will be sufficient authority for a minister, clergyman, or a priest to celebrate a regular M., just as if it were a certificate of proclamation of banns. No minister of the established Church of Scotland, however, is obliged to celebrate a M. not preceded by proclamation of banns. Where objection is made to the M., relative to a legal incapacity to marry, or a legal impediment to M., the registrar is forbidden to issue a certificate until he sees the judgment of a court of law disposing of the objection.

United States.—The law of M. in the United States is far from being settled; it is now, and for some time past has been, in a transitory condition.

The definition of M. by jurists in the United States differs from the Roman Church definition which elevates it to a sacrament; also from the definition which makes M. nothing more than a civil contract. In the United States, in the language of Judge Story, 'it is more than a contract; it is an institution founded upon the consent and contract of the parties, and has peculiarities in its nature, character and operation, different from what belongs to ordinary contracts.' This view of M., as something more than a mere contract, is peculiarly necessary in the United States, because of the numerous questions arising under conflicting laws relating to M. and divorce, in the different states.

Consent is the essence of a valid M. There can be no valid M. made by those who had not sufficient minds to consent, such as idiots or insane persons. So a M. procured by force or fraud may be set aside; or if another husband or wife of either of the parties be living, the M. is invalid; or if the parties are within the prohibited degrees of kindred, the M. is void. To make a valid M., each of the parties must have attained the age of consent; this varies in different states, ranging from 16 to 18 years in males and from 12 to 14 in females. The consent of parents or guardian to the M. of minors is required by the statutes of some of the states. Whether a M. without such consent would be absolutely void would depend largely upon the statute. Generally the M. would be held valid, though the person celebrating it might be punishable for abduction. The distinction between void and voidable M. still exists in the United States, though it has been modified by various statutes. A void M. is a nullity *ab initio*, and its validity may be impeached in any court, at any time. A voidable M. is valid until a competent tribunal has pronounced it void in direct proceedings to set the marriage aside. In most of the states, relationship within the prohibited degrees, and polygamy, render a M. void; and such causes as want of age, insanity or idiocy, physical disability, and fraud render a M. voidable. The effect of a M. being void or voidable is on the status of the par-

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ties—when void the relationship is unlawful from the beginning; when voidable it is lawful until the M. is dissolved by the decree of a competent tribunal.

The M. acts in many of the states render certain solemnities indispensable in the M. celebration, though informal marriages have to a large extent been recognized in the United States. A present agreement between competent parties to take each other for husband and wife is generally regarded as constituting a valid M. Such a M., in a contest, becomes the subject of proof, and may be proved by actual cohabitation as husband and wife, acknowledgment, declarations, conduct, repute, reception among neighbors, and the like. But the words of the agreement must not be *verba de futuro*; such an agreement only gives a cause of action for breach of promise to marry. If an agreement in *verba de futuro* is followed by a consummation, a legal presumption is raised that words *de præsenti* afterwards passed between the parties, and, unless this presumption is rebutted, the M. may be sustained.

The formal M. throughout all of the states consists in having the celebration take place before a clergyman or before some civil officer designated by statute. So far as forms and ceremonies are concerned, it is a general rule that the validity of the M. is to be determined by the law of the state in which it is solemnized.

In the United States, jurisdiction in all matrimonial causes is usually vested in courts of equity, or courts of equitable powers.

Within recent years the rules of the common law as to property rights of husband and wife have been largely changed by statutes. These statutes, familiarly known as 'the married women acts,' have been adopted to a greater or less extent in all of the states. By these acts married women have been empowered to hold real and personal property, with the same right and management, control, and disposition as unmarried women would have, to carry on business on their own account, for their own exclusive benefit, and to make contracts in relation to their separate property and the conduct of their business, which will be enforceable at law. And in most of the states married women may sue and be sued in their own name, without joining the husband; although in some states it is still necessary to join the husband in suing the wife in certain cases of tort.

During the cohabitation the law will, from that circumstance, presume the assent of the husband to all contracts made by the wife for necessities which are suitable to the husband's degree and estate. Even though the husband be an infant, he is liable for necessities furnished to his wife and children, their interests being considered as identified with his.

Contracts in restraint of M. are wholly void; e.g., a promise to a woman to marry no one but her.

See HUSBAND AND WIFE. JUDICIAL SEPARATION: DIVORCE: also MIXED MARRIAGES: MIXED RACES.

MARROT—MARROW CONTROVERSY.

• MARROT, n. *mǎr'ót*: a large aquatic bird; the auk.

MARROW, n. *mǎr'rō* [Icel. *mergr*; Dan. *marg*; Dut. *margh*; Ger. *mark*, marrow, pith: Icel. *mor*, lard; *meria*, to bruise]: the soft, fatty matter contained in the cavities of bones (see below): the pith of certain plants; the essence; the best part. MAR'ROWISH, a. *-ish*, having the nature of marrow. MAR'ROWY, a. *-rō-ŷ*, full of marrow: MAR'ROWLESS, a. *-lēš*, without marrow. MAR'ROW-BONES, bones boiled for their marrow; the knee or leg bones: MAR'ROW-FAT, a choice but late variety of pea. VEGETABLE MARROW, the fruit of the *Cucur'bitā ovif'era*, a supposed variety of the common gourd, ord. *Cucurbitācēæ*—so named from the softness of its fleshy substance; also called *egg-gourd*.

MARROW, n. *mǎr'rō* [Gael. *mar*, like; *marao*n, together]: in *Scot.* and *prov. Eng.*, a mate; a companion; one of a pair: V. to pair; to match: ADJ. similar; suitable. MAR'ROWING, imp. MARROWED, pp. *mǎr'rōd*. MAR'ROWLESS, a. *-lēš*, without another to match.

MAR'ROW: substance of low specific gravity, filling the cells and cavities of the bones of mammals. There are two varieties, *watery marrow* and *oily marrow*. In some of the short bones, as the bodies of the vertebræ and the sternum, the marrow has a reddish color, and is found on analysis to contain 75 per cent. of water, the remainder consisting of albuminous and fibrinous matter with salts and a trace of oil. In the long bones of a healthy adult mammal, the marrow occurs as a yellow, oily fluid, contained in vesicles like those of common fat, which are imbedded in the interspaces of the medullary membrane, which is a highly vascular membrane lining the interior of the bones. This marrow consists of 96 per cent. of oil, and 4 of water, connective tissue, and vessels. The oily matter of the marrow is composed of the same materials as common fat, with the oleine (or fluid portion) in greater abundance. Being of low specific gravity, it is well suited to fill the cavities of the bones, and forms an advantageous substitute for the bony matter which preceded it in the young animal. Its special uses are not clearly known, but the fact that it loses much of its oil when the general nutritive powers fail, or when certain forms of disease attack the bone, shows that it serves some definite purpose in the economy.

MARROW CONTROVERSY: one of the most strenuous and memorable struggles in the religious history of Scotland, named from a book, *Marrow of Modern Divinity*, written by a Puritan soldier in the time of the Commonwealth. The highly 'evangelical' character of this work, and especially its doctrine of the free grace of God in the redemption of sinners, had made it a great favorite with the few zealous and pious ministers then found in the Church of Scotland: and 1718, an edition was published by the Rev. James Hog of Carnock, followed, 1719, by an explanatory pamphlet. The general assembly of the same year appointed a commission to look after books

and pamphlets promoting such opinions as are contained in the *Marrow*, and to summon before them the authors and recommenders of such publications. The committee, after examination, drew up a report, to the assembly of 1720; and the result was the formal condemnation of the doctrines of the *Marrow*, a prohibition of teaching or preaching them, and an exhortation (strong, but vain) to the people of Scotland not to read them. This act of the assembly was immediately brought by the celebrated Thomas Boston (q.v.) before the presbytery of Selkirk, which in turn laid it before the synod of Merse and Teviotdale. The 'evangelical' ministers in the church, few in number, but supported by considerable popular sympathy (for the *Marrow* by this time ranked next to the Bible in the regards of the religious portion of the Scottish peasantry), resolved to present a representation to the next general assembly (1721), complaining of the late act, and vindicating the 'truths' which it condemned. 12 ministers signed the representation—James Hog, Thomas Boston, John Bonnar, James Kid, Gabriel Wilson, Ebenezer Erskine, Ralph Erskine, James Wardlaw, James Bathgate, Henry Davidson, William Hunter, and John Williamson. These are the famous 'Marrow-men'—known also as the 'Twelve Brethren' and the 'Representers'—whose names were long held in veneration by the lovers of 'evangelical' religion. A commission of the assembly of 1721 was appointed to deal with the 12, and a series of questions was put to them, to which answers were drawn up by Ebenezer Erskine and Gabriel Wilson. These replies did not prove satisfactory, and the 'Marrow-men' were called before the bar of the assembly (1722), and solemnly rebuked. Nevertheless, as the assembly was not supported in its position by the religious sentiment of the nation, no further steps were taken in the matter; thus the victory virtually was with the evangelical recusants. It was, however, substantially the same controversy—though it did not go by the name—which, eleven years later, resulted in the deposition of Ebenezer Erskine, and the origination of the 'Secession' body. See BOSTON, THOMAS: ERSKINE, EBENEZER.

MAR'RUM: see AMMOPHILA.

MARRY, v. *mār'ri* [F. *marier*, to marry—from L. *marītārē*, to marry: F. *mari*; L. *marītus*, a husband (see MARRIAGE)]: to unite a man and woman as husband and wife; to give or dispose of in marriage; to enter into wedlock; among *seamen*, to splice ropes, that is, to interweave one end of a rope into that of another. MARRYING, imp. *mār'ri-ing*. MAR'RIED, pp. *-rīd*: ADJ. united in marriage; wedded.

MARRY! int. *mār'ri*: a term of asseveration, from the Virgin *Mary*; by *Mary*! indeed! forsooth!

MARRYAT, *mār'ri-at*, FREDERICK: English sailor and novelist: 1792, July 10—1848, Aug. 2; b. London; son of a wealthy W. India merchant. On leaving school, he

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entered the navy as a midshipman under Lord Cochrane. In 1812, he attained his lieutenancy, and was made commander 1815. While afloat, he saw much active service, established a high character for bravery, and was made a C.B. 1825, June. About 1830, he retired from the naval service, and wrote his first novel, *Frank Mildmay*, rapidly followed by those graphic and humorous pictures of sea-life which have taken a permanent place in every English circulating library. M. died at Langham, Norfolk: he was married, and left six children. The freshness of the new field was an acceptable surprise to the world of novel-readers; and Capt. M.'s vividness of description, humorous portraiture, and wealth of incident commended his works to all classes. In 20 years of authorship he produced 24 vols.: the most popular are perhaps *Midshipman Easy*, *Peter Simple*, *Jacob Faithful*, *Snarley-yow, or the Dog Fiend*, and *Japhet in Search of a Father*. His fictions are full of adventure and broad humor—since Smollett's, no novels have caused so much laughter.—His daughter Florence M. (Mrs. Ross-Church, b. Brighton, England, 1837), has published a long series of novels, and the *Life and Letters* of her father (1870).

MARS, n. *mârz* [L. *Mars*, god of war]: one of the smaller planets, situated between the earth and Jupiter: see PLANETS.

MARS, *mârz* [contraction of MAVERS or MAVORS; in the Oscan or Sabine language, MAMERS]: ancient Italian divinity identified by the Græcizing Romans with the Thracian-Hellenic *Ares*. Two conceptions of him are thus presented.

The Roman M., who as a war-god is surnamed *Gradivus* (= *grandis divus*, the great god), bore also the surname *Silvanus*, and appears to have been originally an agricultural deity; and propitiatory offerings were presented to him as the guardian of fields and flocks.: He was god of the heavens, wielder of thunder, sender of rain, giver thus of fertility and increase. But as the fierce shepherds who founded the city of Rome were more addicted to martial than to pastoral pursuits, it is evident how easily in the course of time *Mars Silvanus* should have become the 'God of War.' M., who was a perfect personification of the stern, relentless, cruel valor of the old Romans, was held in highest honor. He ranked next to Jupiter; like him he bore the venerable epithet *Father* (*Mars-piter*); he was one of the three tutelary divinities of the city, to each of whom Numa appointed a flamen; he was even said to be the father of Romulus himself (by Rhea Silvia, priestess of Vesta), and was thus believed to be the real progenitor of the Roman people. He had a sanctuary on the Quirinal; and the hill received its name from his surname, *Quirinus*, the most probable meaning of which is *the spear-armed*. Under this designation he was invoked as the protector of the *Quirites* (citizens)—in other words, protector of the state. The

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principal animals sacred to him were the wolf and the horse. He had many temples at Rome, the most celebrated of which was that outside the *Porta Capena*, on the Appian Road. The *Campus Martius*, where the Romans practiced athletic and military exercises, was named after him; so was the month of March (*Martius*), the first month of the Roman year. The *Ludi Martiales* (games in his honor) were celebrated every year in the circus, Aug. 1.

ARES, Greek god of war, was the son of Zeus and Hera: and the favorite of Aphrodite, who bore him several children. When Mars became identified with the Greek Ares in the Roman mind, he was regarded as almost equivalent to the warlike element in Jupiter, according to the imported tendency to consider Jupiter as the great and central god whose various special characteristics were represented by the other deities. He is represented in Greek poetry as a most sanguinary divinity, delighting in war for its own sake, and in the destruction of men. Before him into battle goes his sister *Eris* (Strife); with him are his sons and companions, *Deimos* (Horror) and *Phobos* (Fear). He does not always adhere to the same side, like the great *Athena*, but inspires now the one, now the other. He is not always victorious. Diomedes wounded him, and in his fall, says Homer, 'he roared like nine or ten thousand warriors together.' Such a representation would have been deemed blasphemous by the ancient Roman mind, imbued as it was with a solemn Hebrew-like reverence for its gods. The worship of Ares was never very prevalent in Greece; it is believed to have been imported from Thrace. There, and in Scythia, were its great seats, and there Ares was believed to have his chief home. He had, however, temples or shrines at Athens, Sparta, Olympia, and other places. On statues and reliefs, he is represented as a person of great muscular power, and either naked or clothed with the chlamys.

MARSALA, *mâr-sâ'lâ*: large fortified seaport on the w. coast of Sicily, in a fruitful, well-cultivated district; a regularly built and pleasant town, with a college, a cathedral, a gymnasium, and several conventual establishments. It occupies the site of Lilybæum, anc. cap. of the Carthaginian settlements in Sicily, and was selected by Garibaldi as the landing-point of his volunteers in his famous Sicilian campaign 1860. It obtained its present name from the Arabs, who, when they held Sicily, esteemed this part so highly that they called it *Marsa Alla*, 'Port of God.' Its harbor is encumbered with sand, but its celebrated wines form an export trade of great importance, chiefly since 1802, when they were adopted by Lord Nelson for the use of the British fleet. 30,000 pipes of M. wine, which resembles sherry, are annually manufactured, two-thirds being exported. M. has also a large export trade in grain, oil, salt, and soda. Pop., commune (1871) 34,200; (1881) 40,250; town (1891) 34,202.

MARSALA—MARSEILLES.

MARSALA, n. *mâr'sa-la*: a Sicilian wine, so named from the seaport whence exported.

MARSDEN, *mârs'dén*, SAMUEL: 1764–1838, May 12; b. England: Episc. missionary. He received a common-school education at Hull; engaged in mercantile business at Leeds; was a member of the Wesleyan Church till a desire for a collegiate education induced him to unite with the Church of England and enter St. Joseph's College, Cambridge; was ordained 1793; and in the following year accepted the appointment of chaplain to the new penal colony at Paramatta, Australia. Part of his salary was a grant of land and the use of a number of convicts to cultivate it. With these he soon established a model farm, used the profits to open schools and missions, and began training the convicts in industrial habits. Returning to England 1809, and failing to induce the Church Missionary Soc. to send missionaries to the New Zealand Maories, he prevailed on two laymen, William Hall and John King, to accompany him. At Australia he purchased a vessel, *The Active*, and in it visited New Zealand with his associates, and established a mission. He made seven visits to the Maories, and was largely instrumental in their remarkable Christianization and civilization.

MARSEILLAISE, or MARSEILLAISE HYMN, n. *mâr'sâl-yâz'*: name by which the grand song of the first French Revolution is known. In the beginning of 1792, when a column of volunteers was about to leave Strasburg, the mayor of the city, who gave a banquet on the occasion, asked an officer of artillery, Rouget de Lisle, to compose a song in their honor: the result was the M.—both verse and music being the work of a single night. De Lisle entitled the piece *Chant de Guerre de l'Armée du Rhin*. Next day, it was sung with the rapturous enthusiasm characteristic of the French; and, instead of 600 volunteers, 1,000 marched out of Strasburg. Soon from the whole army of the north resounded the thrilling and fiery words *Aux armes, Aux armes*; nevertheless, the song was still unknown at Paris, and was introduced there by Barbaroux, when he summoned the youth of Marseille to the cap. 1792, July. It was received with transports by the Parisians, who—ignorant of its real authorship—named it *Hymne des Marseillais*.

MARSEILLES. *mâr-sâl'yêh* or *mâr-sâ'yêh*: third largest city and chief seaport of France, chief port also of the Mediterranean; in the dept. of Bouches-du-Rhone, on the Gulf of Lyon, 410 miles in direct line s.s.e. of Paris, lat 43° 17' n., long. 5° 22' e. M. is a military place of the fourth class, and is defended by a citadel and other works, the roads are protected by the fortified isles of If (crowned by a castle, formerly a state-prison), Pomègue, and Ratonneau. Its harbor is formed by an inlet of the sea running eastward into the heart of the city, and covering nearly 70 acres. It has natural and artificial advantages, and can accommodate 1,200 vessels. The

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new harbor consists of a series of docks or *bassins* (*de la Joliette, de l'Entrepôt, Napoléon, Impérial*), more than a mile long, with an area abt. 288 acres: other port accommodations make a total of 422 acres; but the $4\frac{1}{2}$ m. of quays are inadequate for the immense annual traffic of more than 3,400,000 tons. Alongside the Bassins de l'Entrepôt and Napoléon are the bonded warehouses (cost \$5,000,000), finest of the kind in Europe. From the margin of the old harbor, the ground rises on all sides, forming a kind of amphitheatre; and beyond the city proper the encircling hills, covered with vineyards and olive-gardens, are dotted with white country-houses. Immediately n. of the harbor is the old town, with its narrow streets, lined with high closely-piled houses; but through it a wide avenue, with branches, has recently been opened. South of the old harbor is the church of St. Victor, the most ancient in M.; and farther s. rises the rocky hill of *Notre Dame de la Garde*, with its church, held in the highest veneration by the sailors of the Mediterranean. At the foot of the hill is the wide promenade, Cours Bonaparte. Other fine promenades are Le Cours and Le Prado. The principal public buildings are the Hôtel de Ville, the museum, the public library with 78,000 vols., and the exchange. The *cafés* and shops of M. rival those of Paris in splendor. M. is the first commercial emporium of France. It has many soap-works, iron-manufactories, sugar refineries, etc. The large vessels and steamers annually entering its harbor number more than 8,600, tonnage more than 2,600,000. M. is directly connected by rail with Lyon, Toulouse, and Nice; and is the packet station for Italy and the East. The formerly barren country round M. has been of late greatly fertilized by the canal which supplies M. with water from the Durance: this aqueduct is 94 m. long, 15 m. under ground. During a portion of the year, the climate of M. is delightful, but in summer and autumn the heat is often intense. Cold, dry, and cutting winds from the n.e. render the climate at times exceedingly trying. In the environs are about 6,000 *bastides*, or country villas.

M. was founded by a Greek colony from Phocæa, in Asia Minor, about B.C. 600. Its ancient name was *Massalia*, written by the Romans *Massilia*. It was an important member of the ancient Greek community, planted numerous colonies along the n. Mediterranean shores, and introduced the germs of Greek civilization into Gaul. The Massaliots were long in intimate alliance with the Romans; but the city was at last taken by Julius Cæsar. In the 8th c. it was destroyed by the Arabs, and the maritime republics of Italy inherited the commerce of the Mediterranean, which formerly had been centred here. It was united, with the whole of Provence, to France in the reign of Charles VIII. In 1720, when it had again risen to importance, it was ravaged by a fearful epidemic, which swept away 40,000 of its inhabitants. Since 1830, the commerce and industry of the city have increased vastly. The conquest of

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Algeria has brought increasing prosperity to M., and its n. African trade is now an important part of its commerce. Pop. (1891) 403,749; (1900) 491,161.

MARSH, n. *mārsh* [F. *marais*, a marsh—from OF. *maresc*—from mid. L. *mariscus*: OE. *mareis*; Dut. *maer-sch*; It. *marese*, a marsh, a moorish or fenny place]: a tract of low land too wet for tillage; a fen. MARSHY, a, *mārsh'ī*, wet; fenny. MARSH'INESS, n. -*nēs*, state of being marshy. MARSH-ELDER, the guelder-rose. MARSH-MALLOW, (see below). MARSH-GAS, the fire-damp, or light carburetted hydrogen, evolved from marshes and stagnant pools (see METHANE). MARSH-HAWK (see HARRIER). MARSH-HEN (see RAIL). MARSH-MARIGOLD (see below). MARSH-TREFOIL, water-plant, called *Beg-bean*, or *Buck-bean* (q.v.).

MARSH, GEORGE PERKINS, LL.D.: philologist and diplomatist: 1801, Mar. 17—1882, July 24; b. Woodstock, Vt. He graduated at Dartmouth College, 1820; studied law and practiced at Burlington, Vt.; was elected to the executive council of the state, 1835, and to Congress 1842 and 49. He was appointed U. S. minister at Constantinople 1849, and was charged with a special mission to Greece 1852. He travelled in n. Europe, and became adept in the Scandinavian languages. In 1861, he was appointed U. S. minister at Rome; and died in that office, at Vallambrosa. Dr. M. was an earnest and profound philological student. His most important works are a *Grammar of the Old Northern or Icelandic Language* (compiled 1838): *The Camel, his Organization and Uses* (1856); *Lectures on the English Language* (1861); *The Origin and History of the English Language* (1862); *Man and Nature*—largely re-written and issued under the title, *The Earth as Modified by Human Action* (1874).

MARSH, JAMES, D.D.: 1794, July 19—1842, July 3; b. Hartford, Vt.: Congl. minister, educator. He graduated at Dartmouth 1817; was tutor there 1818-20; graduated at Andover Theol. Seminary 1822; ordained 1824; prof. of modern languages in Hampden-Sidney College, Va., 1824-26; pres. of the Univ. of Vt. 1826-33; and prof. of moral and intellectual philosophy there 1833-42. He received his degree from Columbia 1830 and Amherst 1833. His literary work, which was large and important, included a series of papers to the *Vermont Chronicle on Popular Education*, under the pen name *Philopolis*; a *Preliminary Essay* in Coleridge's *Aids to Reflection* (Burlington 1829): *Selections from the Old English writers on Practical Theology* (1830); and several translations from the German, including Herder's *Spirit of Hebrew Poetry*, 2 vols. (1823). See his *Remains*, with Memoir by Joseph Torrey (Boston 1843; 2d ed. 1845).

MARSH, OTHNIEL CHARLES, PH.D., LL.D.: naturalist: b. Lockport, N. Y., 1831, Oct. 29. He graduated at Yale 1860; studied mineralogy and paleontology in the Sheffield Scientific School at Yale 1860-62, and zoology, geology, and mineralogy in the universities of Berlin, Heidelberg, and Breslau 1862-65; was appointed to the

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new chair of paleontology in Yale 1866, which he still (1890) holds: became paleontologist in charge of the div. of vertebrate paleontology in the U. S. Geological Survey 1882; was elected pres. of the American Assoc. for the Advancement of Science 1878, and pres. of the National Acad. of Sciences 1883: and holds membership in the chief American and European scientific societies. His great work has been the investigation of the extinct animals of the Rocky Mountain region of N. America, in which he has crossed the mountains more than 20 times, and has discovered more than 200 fossil animals previously unknown. In 1876 he began preparing a series of monographs of his western discoveries for publication by the govt., which comprise *Odontornithes, or Birds with Teeth* (Washington 1880); *Dinocerata* (1884); the dinosaurs of the order Sauropoda; the Stegosauria, reptiles; the Brontotheridæ; and others—all profusely illustrated. In 1875 he made a memorable exposure of the fraudulent treatment of the Indians, which led to the adoption of reformatory measures. In 1877 he received the Bigsby medal for paleontological discoveries from the Geological Soc. of London, of which he is a fellow; and 1886 received the degree PH.D. from the Univ. of Heidelberg and LL.D. from Harvard. In 1890, Jan., scientific circles in the United States were excited by the publication by Prof. Edward Drinker Cope, of the Univ. of Penn., of charges affecting the official and professional character of Maj. John W. Powell, director of the U. S. Geological Survey, and his chief assistant, Prof. M. Prof. Cope charged M. with plagiarism and gross ignorance, and both M. and Maj. Powell with incompetence in the performance of their important public duties, and supported his charges with documentary evidence. This publication brought denials from M. and Maj. Powell, and counter charges against Prof. Cope. M. died 1899, March 18. His will divided a considerable est. between National Acad. Sciences and Yale Univer.

MARSHAL, n. *mâr'shal* [mid. L. *mariscal'cus*, the master of the horse—from O. Ger. *mähre*, a horse; *schalk*, a servant: F. *maréchal*; OF. *mareschal*, one who shoes and takes care of horses]: *anciently*, officer under whose cognizance fell everything pertaining to the use of arms, the regulation of tournaments, etc. (see MARSHAL below): an officer of the highest military rank (see FIELD-MARSHAL, under FIELD): a master of ceremonies; in *U. S.*, a civil officer of a district (see MARSHAL, below): V. to dispose or arrange in order. MAR'SHALLING, imp.: N. act of arranging in proper order. MAR'SHALLED, pp. -*shald*: ADJ. arranged in proper order. MAR'SHALLER, n. one who disposes in proper order. MAR'SHALSHIP, n. the office of a marshal. EARL-MARSHAL, in *Eng.*, the eighth great officer of state, hereditary in the family of the Duke of Norfolk (see MARSHAL, below). FIELD-MARSHAL, highest military rank in the British army (see MARSHAL below).

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MARSHAL: a term, in its origin, meaning a groom or manager of the horse, though eventually the king's marshal became one of the principal officers of state in England. The royal farrier rose in dignity with the increasing importance of the *chevalerie*, till he became, jointly with the Constable (q.v.), the judge in the *Curie Martiales*, or courts of chivalry. An earldom is attached to the dignity, and the office of earl-marshal is now hereditary in the family of the Duke of Norfolk. When the king headed his army in feudal times, the assembled troops were inspected by the constable and M., who fixed the spot for the encampment of each noble, and examined the number, arms, and condition of his retainers. With these duties was naturally combined the regulation of all matters connected with armorial bearings, standards, and ensigns. The constable's functions were virtually abolished in the time of Henry VIII., and the M. became thenceforth the sole judge in questions of honor and arms. The earl-marshal is pres. of the English College of Arms, and appoints the kings-at-arms, heralds, and pursuivants. The M.'s functions were formerly exercised in time of peace in the *Aula Regis* or King's Great Court, and on the division of the *Aula Regis*, he appointed deputies in the new courts; hence arose the offices of M. of the king's (or queen's) bench and of exchequer, whose principal duty is to take charge of persons committed to their custody by the court. Besides the earl-marshal, there is a knight-marshal, or M. of the king's (or queen's) household. The M. or provost-marshal of the admiralty is an officer whose duty it is to act ministerially under the orders of the court of admiralty in securing prizes, executing warrants, arresting criminals, and attending their execution. The dignity of M. existed formerly in Scotland, where a different orthography was adopted, and the office of marischal was hereditary in the family of Keith. In France, the highest military officer is called a M., a dignity which originated early in the 13th c. There was at first only one *Maréchal de France*, and there were but two till the time of Francis I. Their number afterward became unlimited. Originally, the M. was the esquire of the king, and commanded the vanguard in war; in later times, the command became supreme, and the rank of the highest military importance. From the title of this class of general officers, the Germans have borrowed their *Feld-marschall*, and we our *Field-marshal*, a dignity bestowed on commanders distinguished either by elevated rank or distinguished service: see **FIELD-MARSHAL**, under **FIELD**.

In the United States, M. is a civil official of U. S. courts, one being appointed by the Pres. for each U. S. judicial district: his duties correspond to those of sheriff in state courts. The U. S. marshal with his deputies enforces the statutes of the federal govt. in his district. In some southern and western states the head of a municipal police force is called a M.; he is an official

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distinct from the sheriff of the county, and from a constable of a justice court. The name has been improperly applied sometimes to volunteer police officers called into service for a special time and purpose.

MARSHALL, *mâr'shal*: city, cap. of Calhoun co., Mich.; on the Kalamazoo river and the Michigan Central railroad; 32 m. w. of Jackson, 36 m. e. of Kalamazoo. It contains co. court house, 12 churches, high school, union school building (cost 60,000), paper mill, railroad car shops, machine shops, flour and planing mills, and 2 national banks (cap. \$200,000). Pop. (1870) 4,925, (1880) 3,795 (1890) 3,968; (1900) 4,370.

MARSHALL: city, cap. of Saline co., Mo.; near the salt fork of Black river, and on the Chicago and Alton railroad, 79 m. w. of Mexico, 85 m. e. of Kansas City. It is in a rich agricultural region, with ample supply of anthracite coal and building-stone, and valuable salt-springs. Pop. (1890) 4,397; (1900) 5,086.

MARSHALL: city, cap. of Harrison co., Tex.; on the Texas Pacific railroad; 16 m. s. of Jefferson, 40 m. w. of Shreveport. M. is growing rapidly. It contains 8 churches, co. court house, Wiley Univ. (Meth. Episc., founded 1873), female college, 2 institutes, co. fair assoc. and grounds, railroad car shops and headquarters, several mills, and 2 national banks, (cap. \$175,000). Pop. (1870) 1,920; (1880) 5,624; (1890) 7,207; (1900) 7,855.

MARSHALL, HUMPHREY: soldier: 1812, Jan. 13—1872, March 28; b. Frankfort, Ky.: son of John Jay M. He graduated at the U. S. Milit. Acad. 1832; but studied law, was admitted to the bar, and practiced in Frankfort and Louisville till the Mexican war, when he became col. 1st Ky. vol. cav. He was member of congress 1849-52; U. S. minister to China 1852-54; member of congress 1855-59; opposed secession, but joined the Confederate cause 1861, Sep.; became brig.gen. in the Confederate army, and fought Gen. Garfield at Middle Creek 1862, Jan.; resigned and entered the Confederate congress; and after the war practiced law in Richmond and Louisville.

MARSHALL, JOHN, LL.D.: chief-justice of the United States: 1755, Sep. 24—1835, July 6; b. Fauquier co., Va.; eldest of 15 children of Col. Thos. M. After studying with his father, he went to school at Westmoreland at the age of 14, and studied later under a private tutor, until at the age of 18 he began the study of law. In 1775 he left his studies uncompleted, and joined a military company in a regt. in which his father was major. He distinguished himself at the battle of Great Bridge; 1776, July, he was made lieut. in the 11th Va. regt. and went north; 1777, May, he became capt., and was in active service till the close of 1779, taking part in the battles of Brandywine, Germantown, Monmouth, and minor engagements, and sharing all the hardships of Valley Forge, where he gained the warm esteem of

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Washington. In the winter of 1779 he was sent to Va. to take command of a new corps to be raised there, meanwhile attending lectures on law and natural philosophy at William and Mary College. Next summer he was licensed to practice law, but went back to the army, the project of a new corps in Va. having failed. He remained in the army till 1781, when he resigned, and at the close of the war began practice as an attorney, in which his unusual grasp and comprehension of mind, coupled with great amiability, gave him success from the start. In 1782 he was elected to the house of delegates; 1783 he married Mary Willis, daughter of Treasurer Ambler, and removed to Richmond; 1787 he was again elected to the house, to represent Henrico co.; and 1788, June, he was a member of the Va. convention to consider the constitution drawn up at Philadelphia, whose adoption he eloquently and effectively advocated. The credit of its final acceptance by a vote of 89 to 79 belongs to him and Madison more than to any others. When, 1788, Richmond was given the right to send a representative to the assembly, M. was elected and held his seat during the sessions of 1789, 90, and 91, supporting the federal side against the state rights party with marked ability and vigor, yet without losing the esteem and friendship of even his most earnest opponents. 1792-95 he devoted himself to his legal practice, though often appearing in public in defense of Washington's administration; 1795 he was again in the assembly, defending Jay's treaty with good effect. He declined the attorney-generalship and the appointment as minister to France, though finally accepting the latter from Adams, and representing the administration so ably in the fruitless negotiations in Paris, 1797, with reference to the obstructions offered American commerce, that on his return he was received with extraordinary demonstrations of public favor. He then returned to his practice, only, however, to be elected to congress 1799, and at once to become the acknowledged federal leader there, among the rest making his famous speech defending the executive's action in surrendering the murderer Robbins to the British in compliance with a clause in Jay's treaty, and forever settling the points in international law involved. 1800, May, he was made secretary of state; and 1801, Jan. 31, was appointed by Adams chief justice of the U. S. supreme court, where his influence was acknowledged to be paramount. 1804-07, he published a *Life of Washington*, 5 vols., which, 1832, was revised and condensed into 2 vols. In 1828 he served in the Charlottesville convention for devising a system of internal improvements; and 1829 in the reform convention to revise the old state constitution. He died in Philadelphia where he had gone to procure medical relief from an attack of liver complaint. His unassuming piety, modesty, and amiability gained the love and respect of all classes. *The Writings of John Marshall*, etc. (Boston 1839), have been

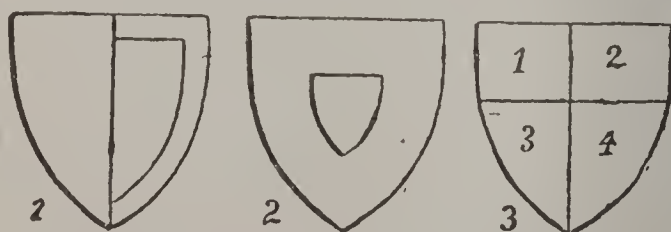
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published under the supervision of Judge Joseph Story his life has been written by Van Santvoord, in *Sketches of the Chief Justices* (New York 1854); Flanders, in *Lives and Times of the Chief Justices* (Philadelphia 1858); and Magruder, in *John Marshall* (Boston 1885).

MAR'SHALL, THOMAS FRANCIS: 1801, June 7—1864, Sep. 22; b. Frankfort, Ky.; nephew of John M.; practiced law at Versailles and Louisville; served in the legislature 1832–36 and again 1838–9, with great ability. 1841–43 he was in congress, and was made conspicuous by his proposed censure of John Quincy Adams. Though a whig, he opposed Clay's U. S. Bank Bill; favored the annexation of Texas, and the election of Polk. 1846 he served in the Mexican war; and during the latter years of his life was successful as a popular lecturer. He died near Versailles, Ky.

MAR'SHALLING OF ARMS, in Heraldry: the combining of different coats-of-arms in one escutcheon, to indicate family alliance or office. In the earlier heraldry, it was not the practice to exhibit more than one coat in a shield, but the arms of husband and wife were sometimes placed *accollée*, or side by side, in separate escutcheons; or the principal shield was surrounded by smaller ones, containing the arms of maternal ancestors; and maternal descent or marriage was frequently indicated by the addition of some bearing from the wife's or mother's shield. Then followed *dimidiation*, where the shield was parted per pale, and the two coats placed side by side, half of each being shown. By the more modern custom of impaling (fig. 1), the whole of each coat is exhibited, a reminiscence of the older practice being retained in the omission of bordures, orles, and treasures on the side bounded by the line of impalement. The most common case of impalement is where the coats of husband and wife are conjoined, the husband's arms occupying the dexter side of the shield, or place of honor, and the wife's, the sinister side. Bishops, deans, heads of colleges, and kings-at-arms, impale their arms of office with their family coat, giving the dexter side to the former.

A man who marries an heiress (in heraldic sense) is entitled to place her arms on a small shield called an



Marshalling of Arms.

escutcheon of pretense, in the centre of his achievement, instead of impaling, as in fig. 2.

Quartering (fig. 3), or the exhibiting different *coats* on a shield divided at once perpendicularly and horizontally, is the most common mode of marshalling arms since

MARSHALL ISLANDS.

about the middle of the 14th c. The divisions of the shield are called quarters, and are numbered horizontally, beginning at the dexter chief. The most common object of quartering is to indicate descent. The coats quartered in an escutcheon must all have been brought in by successive heiresses (heraldic), who have intermarried into the family. In the case of a single quartering, the paternal arms are placed in the first and fourth quarters and the maternal in the second and third. The third and fourth quarters may, in after-generations, be occupied by the arms of a second and third heiress. Sometimes an already quartered coat is placed in one of the four quarters of the escutcheon, then termed a grand quarter. Occasionally the shield is divided by perpendicular and horizontal lines into six, nine, or even more parts, each occupied by a coat brought in by an heiress; and in case of an odd number of coats, the last division is filled by a repetition of the first. In the course of generations, a shield may thus be inconveniently crowded by the accumulation of coats, including the several coats to which each heiress may, in a similar way, have become entitled, and in Germany, sometimes 20 or 30 coats are found marshalled in one escutcheon; but in British heraldry, families entitled to a number of quarterings, generally select some of the most important. Quarterings, at least in Scotland, are not allowed to be added to the paternal coat without the sanction of the heraldic authorities.

Sovereigns quarter the ensigns of their several states, giving precedence to the most ancient, unless it be inferior to the others in importance. In the royal escutcheon of the United Kingdom, England is placed in the first and fourth quarters, Scotland in the second, and Ireland in the third: the relative positions of Scotland and England being, however, reversed on the official seals of Scotland. Spain bears the arms of Leon in the first and fourth quarters, and of Castile in the second and third. An elected king generally places his arms surtout on an escutcheon of pretense.

MARSHALL ISLANDS: group in the Pacific Ocean, in Micronesia; lat. $7^{\circ} 30'$ n., long. $173^{\circ} 30'$ e.; near the Kingsmills, Caroline, Ellice, and Pleasant groups; port of entry Jaluit; since 1885, Oct. 15, under the protectorate of Germany, they are governed by a high commissioner; yield chiefly copra, though shells, red and pink coral, and sponge are found in limited quantities. They used Chilian and Peruvian coin till the German occupation, when German coin became a legal tender. The people manufacture mats, hats, and fans from the fibre of the cocoa-nut and other native trees. Commercial firms doing a business of \$125,000, or more per year have to pay a yearly license of \$1,500, and those doing a less business \$750. The natives pay a yearly tax of \$2,000 in copra, at 1c. per lb.; foreigners a poll-tax of \$5 per annum; and all trading vessels not belonging to firms

MARSHALLTOWN—MARSH-MALLOW.

established on the islands \$250 per trip. The yearly yield of copra is about 3,000,000 lbs., of which 1,555,616 lbs., valued at \$35,000, were shipped to San Francisco 1888, in which year the islands imported goods from the United States to value of \$38,000. Pop. (1900), 15,063.

MARSHALLTOWN: city, cap. of Marshall co., Io.; on the Central Iowa and the Chicago and Northwestern railroads; 50 m. n.e. of Des Moines, 68 m. w. of Cedar Rapids. It contains 10 churches, high school, public library, railroad, machine, and car shops, oil mill, several flour mills, breweries, grain elevators, foundry, furniture and soap factories, 2 national banks (cap. \$200,000), 1 state bank (cap. \$100,000) and 2 private banks, and ships large quantities wheat. Pop. (1870) 3,218; (1880) 6,240; (1885) 8,298; (1890) 8,914; (1900) 11,544.

MARSHALSEA PRISON, *mâr'shal-sē*: ancient king's bench prison, in Southwark, London; built in the 12th c.; in later times allotted to poor debtors. It was abolished 1849 with the old Marshalsea courts, and has been taken down.

MARSH-MALLOW (*Althæa*): genus of plants of nat. order *Malvaceæ*, differing from the true mallows chiefly in the 6-9-cleft outer calyx. The species, which are not numerous, are annual and perennial plants, with showy flowers, natives of Europe and Asia. **COMMON M.** (*A. officinalis*) grows in meadows and marshes, especially near the sea. It has a stem 2 to 3 ft. high, entire or 3-lobed leaves, both leaves and stem densely clothed



Marsh-mallow (*Althæa officinalis*).

with soft, starry down, and large, pale, rose-colored flowers on short 3-4-flowered axillary stalks. Lozenges made from it (*Pâtes de Guimauve*) are in use. The whole plant is wholesome, and in seasons of scarcity, the inhabitants of some eastern countries often have

MARSHAM—MARSH-MARIGOLD.

recourse to it as a principal article of food. It is said to be palatable when boiled, and afterward fried with onions and butter. The Hollyhock (q.v.) is commonly referred to this genus.

MARSHMAN, JOSHUA, D.D., 1768, Apr. 20—1837, Dec. 5; b. Westbury-Leigh, England: Bapt. missionary. He received a limited education; worked as a weaver till 1794; took charge of a school in Bristol, and while teaching learned the classic, Hebrew, and Syriac languages; joined the Bapt. Church 1799; and was sent to India as a missionary the same year. Prohibited from carrying out his intention of laboring in Calcutta, he landed in Serampore 1799, Oct. 13, and made that the centre of his untiring and devoted work till his death. He at once began studying the Bengalee, Sanskrit, and Chinese languages; began preaching in Bengalee within a year; established a college for instruction of Asiatic, Christian, and other youth in Eastern literature and European science about 1818; and began periodical publication in Bengalee, and established a monthly-paper, the *Friend of India*, 1818. His labors in India were interrupted only by one visit to England 1826-29. His literary work was of great importance; it comprises dictionaries of the Mahratta (1 vol., 1811) and Bengalee (3 vols.) languages; a Chinese version of the New Test. (1822), a *Dissertation on the Characters and Sounds of the Chinese Language*; *The Works of Confucius, containing the Original Text with a Translation*; *Clavis Sinica: Elements of Chinese Grammar*; and *A Defence of the Deity and Atonement of Jesus Christ*. He received his degree from Brown Univ. 1811. See *Life and Times of Carey, Marshman, and Ward*, 2 vols. (London 1859).

MARSH-MARIGOLD (*Caltha*): genus of plants of the nat. order *Ranunculaceæ*, having about 5 petal-like sepals,



(Marsh-Marigold *Caltha palustris*).

no petals, and the fruit consisting of several spreading, compressed, many-seeded follicles. *C. palustris* is a species with kidney-shaped shining leaves and large yel-



Mars, after Flaxman.



Marsupial.—Virginian Opossum
(*Didelphys Virginiana*).



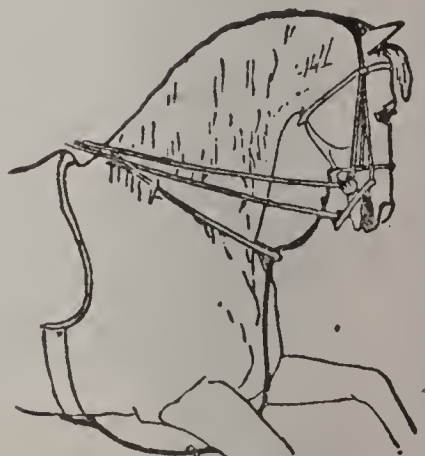
Martello Tower, Eastbourne, Sussex.



Martagon Lily.



House-martin (*Hirundo urbana*).



Martingale.

MARSH-ROSEMARY—MARSTON.

low flowers, ornament of wet meadows and the sides of streams in spring. It partakes of the acridity common in the order; but the flower-buds, preserved in vinegar and salt, are said to be a good substitute for capers.

MARSH-ROSEMARY, *mârsh'rôz-mâ-rî*: plant common to the shores and salt marshes of the United States, Canada, and Europe; the *Statice Limonium*, known also as Sea-lavender. It is perennial; has a cluster of oblong, bristle-pointed, single-ribbed leaves; develops a branched scape 1 to 2 ft. high, from which grow numerous lavender-colored small flowers; and bears a single-seeded utricle in the base of the calyx. Its root contains more than 12 per cent. of tannic acid, which with other properties renders it an invaluable remedy when prepared by infusion for hemorrhages and (as a gargle) for sore mouths and throats. There are numerous varieties, and botanists differ as to their identity with a common species.

MARSH'S TEST: see ARSENIOUS ACID.

MARSICO NUOVO, *mâr'sê-kô nô-ô'rô*: town in the Italian province of Potenza, 18 m. s. of the town of Potenza; built on a height, and exposed to violent winds. Pop. (1872) 6,125.

MARSILEACEÆ, *mâr-sîl-ê-â'sê-ê*, or RHIZOCARPEÆ, *rî-zô-kâr'pê-ê*: nat. ord. of acotyledonous plants, nearly allied to *Lycopodiaceæ*, but differing in the lack of a stem, and in the usually stalked leaves. The species all are inhabitants of ditches and pools, chiefly in temperate regions. No species was known to be of any importance till the discovery of the Nardoo (q.v.) of Australia.

MARSIPOBRANCHII, *mâr'sîp-ô-brăng'kî-î*: order of fishes including lampreys and hag-fishes; same as the dermopterous fishes of Owen. They are the second of Huxley's six orders of fishes. See HAG (fish): LAMPREY.

MARS-LA-TOUR, *mâr-lâ-tôr'*: small village in France, 15 m. from Metz, on the road to Verdun. In the Franco-German war, it was the scene of part of the battle of Gravelotte (q.v.).

MARSOVAN, *mâr-so-vân'*: town of Asia Minor, in the vilayet of Sivas, in a wide undulating plain. M. has manufactures of cotton stuffs. Pop. 12,000.

MARSTON, *mâr's'ton*, GILMAN: lawyer: b. Orford, N. H., 1811, Aug. 20. He graduated at Dartmouth 1837, and at Harvard Law School 1840; was admitted to the bar 1841; was member of N. H. legislature 1845-48, 1872-77, and 1879-88; delegate to state constitutional convention 1850 and 1876; member of congress 1859-63 and 1865-67; and was defeated for congress 1877. In the civil war he was col. of the 21 N. H. vols., and was promoted brig.gen. vols. 1862, Nov. 29; d. July 3, 1890.

MARSTON—MARSUPIAL.

MARSTON, JOHN: 1795, June 12—1885, Apr. 7; b. Boston; naval officer. He was appointed midshipman in the U. S. navy 1813; served in the latter part of the war 1812–15; was promoted lieut. 1825 and attached to the *Brandywine* which took Lafayette to France; promoted commander 1841; commandant navy-yard at Philadelphia 1853–55; capt. 1855; placed on the retired list 1861, but retained in active service; commodore 1862; commanded the *Roanoke* when the *Merrimac* destroyed the *Congress* and *Cumberland* in Hampton Roads; promoted rear-admiral; and was afterward on duty as commandant of the navy-yards at Philadelphia and Portsmouth and the naval station at Key West, and as lighthouse inspector.

MARSTON MOOR, BATTLE OF: 1644, July 2; on an open plain 8 m. n.w. of York, England; between the combined parliamentary and Scotch armies under Lord Fairfax and the Earl of Leven, and the royal armies under Prince Rupert; strength of each side about 25,000 men. Lord Fairfax had been besieging York, which was held by the royalists, and when Prince Rupert advanced to its relief Fairfax withdrew to the moor; and the opposing armies meeting in the afternoon began the battle almost simultaneously with ineffectual cannonading. Early in the evening Rupert ordered a charge with cav. and close combat. His right wing broke the allied left wing, and caused the disorderly flight of a large force. While the royal cav. was scattered in pursuit or plundering, Cromwell's 'ironside' brigade and Leslie's Scotch regts. were rallied by Sir Thomas Fairfax, and ordered to charge the main royalist body. This movement was successful, the royalists were driven from the field with a loss of their artill., 100 colors, 1,500 prisoners, and subsequently of York itself. Both armies lost about 2,000 men, and the parliamentary party gained control of the n. of England as the most important result of the battle.

MARSUPIAL, a. *mâr-sû'pĩ-ăl* [L. *marsu'pĩum*; Gr. *mar-su'pĩon*, a pouch: F. and Sp. *marsupial*]: having a pouch. MARSU'PIALS, n. plu. *-pĩ-ălz*, animals that carry their young in a pouch, as the opossum and kangaroo. MARSU'PIA'LIA, *-pĩ-ăl'ĩ-ă*, or MARSU'PIA'TA, n. plu. *-pĩ-ăl'ă*, an order of mammalia having a sack or pouch under the belly in which they carry their young (see below). MARSU'PIUM, n. *-pĩ-ũm*, the pouch of marsupial animals; a dark-colored membrane in the vitreous body of the eyes of birds. MARSUPITE, n. *mâr'sũ-pĩt*, in *geol.*, genus of free-floating crinoidea, found in the Chalk formation, having a bag-like shape when closed—called by quarrymen, 'cluster stones;' called also Tortoise Encrinites: see CRINIDS.

MARSUPIALIA

MARSUPIALIA, *mâr-sû-pî-â-lî-a*, or **MARSUPIATA**, *mâr-sû-pî-â'ta*: extensive order of non-placental mammals, differing essentially from all others in their organization, especially in their generative system. They include the opossum and kangaroo. The other order of non-placental mammals is the *Monotremata* (q.v.). The animals of this aberrant group originally received the name of *Animalia Crumenata*, or Purse-bearing Animals; and the names now employed have similar signification. The marsupium, or pouch, which is situated on the abdomen of the female, contains the teats, and serves for the protection of the immature young; and is the most marked characteristic of these animals. As the different genera of this order live on various kinds of food—some being herbivorous, others insectivorous, and others purely carnivorous—there are various modifications of their organs of progression, prehension, and digestion; for the most important of these modifications, see the titles of the principal genera. The characters common to the group are here to be noticed.

The leading peculiarity presented by the skeleton is the presence of the marsupial bones (see **MAMMALIA**), which are attached to the pubis, and are embedded in the abdominal muscles. Another constant but less striking peculiarity is a greater or less inversion of the angle of the lower jaw. The organs of digestion, including the teeth, vary extremely, according to the nature of the food; a complex stomach and a cecum of considerable size being present in some; while others (the carnivorous genera) having a simple stomach and no cecum. The brain is constructed on a simpler type than in the placental mammals. The size of the hemispheres (fig.

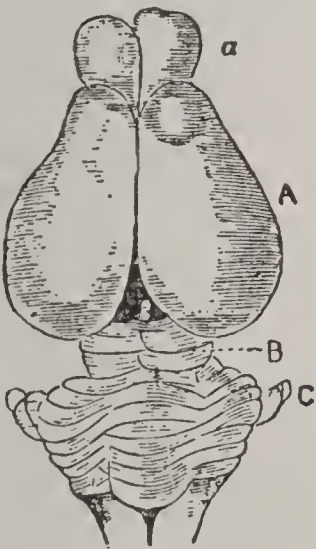


Fig. 1.

Brain of Opossum.

1, A) is so small that they leave exposed the olfactory ganglion (*a*), the cerebellum (*C*), and more or less of the optic lobes (*B*), and they are but partially connected together by the 'fornix' and 'anterior commissure,' the great cerebral commissure known as the 'corpus callosum' being absent. In accordance with this condition of the brain, all these animals are characterized by a low degree of intelligence, and are said (when in captivity) not to manifest any recognition of their feeders. It is, however, especially in the organs of generation and mode of reproduction that these animals differ from all the ordinary mammals. Prof. Owen, who has done more to elucidate this subject, and indeed the anatomy and

physiology of marsupialia generally, than any other anatomist, observes that in all the genera of this order the uterus is double, and the introductory passage more or less (sometimes wholly) separated into two lateral

MARSUPIALIA.

canals. Both the digestive and generative tubes terminate within a common Cloaca (q.v.), and there are various other points in which these animals manifest their affinity to the oviparous vertebrates. The marsupial bones serve important purposes in connection with their generative economy. 'In the female,' he observes, 'they assist in producing a compression of the mammary gland necessary for the alimentation of a peculiarly feeble offspring, and they defend the abdominal viscera from the pressure of the young as these increase in size during their marsupial existence, and still more when they return to the pouch for temporary shelter,' while in the males they are subservient to the reproductive process. The marsupials belong to the *aplacental* division of the Mammalia (q.v.). The period of their gestation is short (26 days in the Virginian opossum, 39 days in the kangaroo), and the young are produced in so immature a state, that the earlier observers believed that they were produced like buds from the nipples to which they saw them attached. The appearance presented by a young kangaroo of one of the largest species, within 12 hours of its being deposited in the pouch, is described by Prof. Owen (from personal observation in the Zoological Gardens) as follows: 'It resembled an earthworm in the color and semi-transparency of its integument, adhered firmly to the point of the nipple, breathed strongly but slowly, and removed its fore-legs when disturbed. The body was bent upon the abdomen, its short tail tucked in between the hind-legs, which were one-third shorter than the fore-legs. The whole length from the nose to the end of the tail, when stretched out, did not exceed one inch and two lines.' The mother apparently employs her mouth in placing the young at the nipple, where it remains suspended, involuntarily absorbing milk for a considerable time (probably about two months on an average), after which, it sucks spontaneously for some months. Although able from the first, by the muscular power of its lips, to adhere firmly to the nipple, it does not possess the strength to obtain the milk by the ordinary process of sucking. In the process, it is assisted by the adaptation of a muscle to the mammary gland, which, by contracting, injects the milk from the nipple into the mouth of the adherent fetus; and, to prevent the entrance of milk into the air-passage, the larynx is prolonged upward to the aperture of the posterior nares, where it is closely embraced by the muscles of the soft palate. The air-passage is thus entirely separated from the throat, and the milk passes on either side of the larynx into the esophagus.

Prof. Owen has proposed that these animals should be divided into five tribes or primary groups, viz., *Sarcophaga*, *Entomophaga*, *Carpophaga*, *Poephaga*, and *Rhizophaga*, according to the nature of their food. With the exception of one American and one Malayan genus, all known existing marsupials belong to Australia, Tasmania, and New Guinea.—For further details regarding

MART—MARTELLÒ.

this order, see Waterhouse's *Natural History of the Mammalia*, I. and Owen's article 'Marsupialia' in *Cyclopædia of Anatomy and Physiology*.—See KANGAROO: OPOS-SUM: DASYURE: THYLACINE.

MART, n. *mârt* [contr. from *market*: Swiss, *marcht*, a market; *marten*, to traffic]: a place of public sale or traffic: V. in *OE.*, to buy or sell: to traffic. MART'ING, imp. MART'ED, pp. *Note*.—MARKET is also said to be derived from Gael. *marc*, a horse, meaning originally a place for the sale of horses, then for cattle in general, and finally for all kinds of commodities. MART may not be treated exactly as a contraction from *market*, but rather as derived from Gael. *mart*, a cow, meaning thus the place of sale for cows as distinguished from that of horses, and finally a place for public sales on a large scale—see MARKET and MART in Mackay's *Gaelic Etymology*.

MARTABAN, *mâr-ta-bân'*: small town in the province of Pegu, British Burmah, on the banks of the Martaban or Salwen, and near its mouth in the Gulf of M., lat. 16° 32' n., long. 97° 35' e. It was the first town that fell into the hands of the British in the Burmese war 1852.

MARTAGON. n. *mâr'tă-gôn* [F. and Sp. *martagon*; It. *martagone*]: a plant called mountain-lily or Turk's-cap; the *Lilium superbum*, ord. *Liliacææ*.

MARTEL, v. *mâr'têl* [F. *marteler*, to hammer: OF *martel*, a hammer—from mid. L. *martellus*]: in *OE.*, to strike; to make a blow. MAR'TELLING, imp., MAR-TELLED, pp. *mâr'têld*.

MARTEL, CHARLES: see CHARLES MARTEL.

MARTELLO, n. *mâr-têl'lô*, or MARTELLO TOWERS [from forts in Corsica so named: It. *martello*, clapper of a bell—from mid. L. *martellus*, a hammer]: round towers on the sea-side for coast defense, about 40 ft. high, built most solidly; named from Italian towers built near the sea when piracy was common in the Mediterranean, for keeping watch and giving warning of the approach of a pirate-ship. This warning was given by striking on a bell with a hammer; hence these towers were called *Torri di Martello*. They occur in several places round the coast of the United Kingdom; but principally opposite to the French coast, along the s. shore of Kent and Sussex, where, for many miles, they are within easy range of one another. They were erected mostly during the French war, as a defense against invasion. Each had walls of 5½ ft. thickness, and was supposed to be bomb-proof. The base formed the magazine; above were two rooms for the garrison, and over the upper of these the flat roof, with a 4½-feet brick parapet all round. On this roof a swivel heavy gun was to be placed to command shipping, while howitzers on each side were to form a flank-ing defense in connection with the neighboring towers. Although the cost of these little forts was very great, they are generally considered a failure; their armaments

MARTEN.

have mostly been removed, and their garrisons of 6 to 12 pensioner-soldiers replaced by coast-guard men, or by old master-gunners.

MARTEN, n. *mâr'těn* [F. *martre*—from It. *martora*—from mid. L. *martālus*—from a supposed L. *martēs*, a marten], (*Martes*): group of digitigrade carnivorous quadrupeds of family *Mustelidæ*, differing from weasels in having an additional false molar on each side above and below, a small tubercle on the inner side of the lower carnivorous cheek-teeth, and the tongue not rough—characters regarded as indicating a somewhat less extreme carnivorous propensity. The body is elongated



1, Common Marten (*Martes foina*); 2, Pine Marten (*Martes abietum*).

and supple, as in weasels, the legs are short, and the toes separate, with sharp long claws; the ears are larger than in weasels, and the tail is bushy. The martens exhibit great agility and gracefulness in their movements, and are very expert in climbing trees, among which they generally live. The martens range widely throughout the n. hemisphere, and are most abundant in Siberia and n. parts of N. America. The COMMON M., BEECH M., or STONE M. (*M. foina*), and the PINE M. (*M. abietum*), were formerly much more common in inhabited regions than

MARTENSEN—MARTHA'S VINEYARD.

they now are, being sought on account of their fur, and killed on every opportunity, because of their excessive depredations among game and in poultry-yards. The head and body are about 18 inches long, the tail nearly 10 inches. Both species are of dark tawny color, the Common M. having a white throat, and the Pine M. a yellow throat. Many naturalists regard them as varieties of one species, of which they reckon the sable (q.v.) as another variety. The fur of the M. is of two sorts: an inner fur, short, soft, and copious; and long outer hair, from which the whole fur derives its color. The Common M. is much less valuable for its fur than the Pine M., while the Pine M. is much less valuable than the sable; but skins of the Common M. are exported in great numbers from n. Europe, and they are often dyed, and sold as an inferior kind of sable. M. fur varies greatly according to age, sex, season, etc. Pine M. skins are largely procured from n. Europe, Siberia, and N. America.—The martens generally have their retreats in the hollow trunks of trees, or usurp the nest of a magpie or other bird, but sometimes among rocks. They are capable, if taken young, of a degree of domestication, and have been used to rid houses of rats and mice.—The *Spotted M.* or Long-tailed *Dasyure* is a marsupial.

MARTENSEN, *mâr' tén-sén*, HANS LASSEN, D.D.: 1808, Aug. 19—1884, Feb. 4; b. Flensburg, Denmark: theologian. He studied theol. in the Univ. of Copenhagen; spent 1832 in Berlin, Vienna, Paris, and Munich; received his degree 1836: became prof. of philosophy in the Univ. of Copenhagen 1840, and subsequently of theol.; was appointed preacher to the court 1845: and succeeded to the bishopric of Sealand, the highest office in the Danish Church, 1853. He attracted wide attention by his interpretation of the mysticism of the middle ages in his *Mester Eckart* (1840). This was followed by an *Outline of a System of Ethics* (1841), and *Christian Dogmatics* (1849). In the latter he undertook, as a follower of Hegel, to reconcile faith and reason, revelation and science, and made an eloquent and ingenious exposition of his views, which gained for him many admirers in Germany, Holland, Scotland and Sweden, as well as in his own country. Beside several collections of sermons, he also published a *System of Christian Ethics* (1872), a lofty, inspiring, and instructive treatise; and a continuation treating of *The State* (1878).

MARTHA'S VINEYARD, *mâr'thaz vîn' yêrd*: island in the Atlantic Ocean, off the s. coast of Mass., forming the greater part of Dukes co.; 19 m. long, average breadth 5 m.; chief towns, Chilmark, Edgartown, Gay Head, Cottage City, and Tisbury. It is separated from the mainland by Vineyard Sound; is in general level, though portions are 150 ft. above sea-level; and has considerable tracts of low forest, and a light soil that in places is quite productive. It bears a lighthouse, lat. 41° 20' 52" n., long. 70° 49' 47" w., whose white flashing light is 170 ft. above

MARTIAL.

sea-level. Gay Head is at the s.w. extremity; Oak Bluffs, or Cottage City, forming the modern part of Edgartown, is at the e.; and w. of it and on the n. coast is Vineyard Haven. Edgartown village is the co. seat. The island has telegraph and telephone connection with the mainland, street and steam railroads, many large hotels, and large colonies of summer residents on all sides occupying pretty cottages; and is reached by steamer from New Bedford and Wood's Hall. Since 1835 the island has been noted for its camp-meetings, established first by the Methodists, afterward by the Baptists, and now conducted annually by both. The advantages of M. V. as a summer resort for families are its complete isolation, combined with accessibility, salubrity of climate, purity of air and water, delightful coolness, and uniformity of temperature; its safety in sea-bathing, there being no undertow; its fine beach; unsurpassed facilities for boating, fishing, and yachting; absence of liquor-selling, dissipation, and gambling; strong religious sentiment, though not at all prohibitive of rational amusement; variety, elegance, and beauty of its cottages, tents, flower-gardens, and parks, magnificent view of the ocean, with vessels passing each way day and night; and the cordial, social spirit of its summer residents.—M. V. was discovered by Bartholomew Gosnold (q.v.) 1602, who however, gave the name M. V. to the island near by, now known as No Man's Land; and was settled by Thomas Mayhew (q.v.), merchant of Southampton, England, who obtained a grant of this and the neighboring islands, 1642. When Mayhew reached the island he found on it and Nantucket 3,000 adult Indians; in 1675 there were 1,500 braves (warriors) on M. V. alone; in 1702 there were 1,600 natives under Christian training; but now (1890) there are not more than 25 descendants of these Indians, whose tribal name has long been forgotten. M. V. became a part of Mass. 1644, of N. Y. 1664, and again of Mass. 1692; and was frequently plundered by the British in the revolutionary war.

MARTIAL, a. *mâr'shāl* [F. *martial*—from L. *martiālis*, belonging to Mars—from *Mars*, the god of war]: pert. to war; suited to war; warlike; brave; military; soldier-like. MAR'TIALLY, ad. *lī*.

MARTIAL, *mâr'shī-al* (MARCUS VALERIUS MARTIALIS): great Roman epigrammatist: A. D. 40 or 41—abt. 104; b. Bilbilis, in Spain. In 66, he came to Rome, where he resided till 100, when he returned to his native town. In this exile from the gay life of Rome, he consoled himself with the society of a literary patroness, a lady called Marcella, on whose property he lived till his death. When at Rome, he early became famous as a wit and poet; received the patronage of Emperors Titus and Domitian, and obtained from them the privileges of those who were fathers of three children, and, in addition, the rank of tribune, and the rights of the equestrian order. He lived, seemingly, in affluence, in a mansion

In the city, and in Nomentum, a suburban villa, to both of which he makes frequent reference. But, though appearing affluent, he was always seeking money from wealthy patrons, whom he repaid with the gross flattery commonly in those times addressed to the great; and it is supposed that really he was through his whole life straitened in financial resources. From Rome, his reputation rapidly extended to the provinces; and even in Britain his *Epigrammata*, which, divided into 14 books, now form his extant works, were read. These books, arranged by himself for publication, were written in the following order: the first 11 (including *Liber de Spectaculis*) were composed at Rome, with the exception of the third, written during a tour in Gallia Togata; the 12th was written at Bilbilis; and the 13th and 14th at Rome, under Domitian. The last two, entitled *Xenia* and *Apophoreta*, describe, in distichs, the various kinds of *souvenirs* presented by the Romans to each other on holidays. To the other books also we are indebted for much of our knowledge of the manners and customs prevalent under Emperors Nero, Galba, Otho, Vespasian, Titus, Domitian, Nerva, and Trajan, under whose collective reigns M. spent 35 years. His works have great literary value, as embodying the first specimens of what we now understand by epigram—not a mere inscription, but a poem of two or more lines, containing the terms of an antithesis, which goes off with a repercussion at the close. The wonderful inventiveness and facility displayed by M. in this species of composition have always received the highest admiration, qualified only by his disgusting grossness, which, blameworthy in him, was even more blamable as an almost universal feature of that age. The best edition of M. is that of Schneidewin. He has never found an adequate translator.

MARTIAL LAW: properly, that military rule which in time of war is conferred by the laws of war in relation to persons and things within the scope of active military operations; and which for the time suspends civil rights and the remedies founded on them, so far as it may appear necessary to the accomplishment of the purpose of the war (see Prof. Joel A. Parker, *North Amer. Review*, 1861, Oct.). M. L. is sometimes applied also loosely as a collective name for those laws to which the individuals composing the military and naval forces of a country are subject, but which do not apply to civilians; more properly called Military Law (see **ARTICLES OF WAR: MUTINY ACT**). As, however, the soldier remains a citizen, he is governed by the common law in all matters not coming under cognizance of the M. L., the degree to which the latter is applicable to his actions varying in different countries, and in times of peace and war. In France and Austria, a soldier's offenses against the civil code are dealt with by a court-martial; while among British troops—unless serving against an enemy—the civil tribunals deal with non-military offenses.

An important phase of M. L. concerns the degree of

severity which may be applied to an enemy. All authorities agree that the life of an enemy taken in arms is forfeit to his captor; but modern ideas preclude his being put to death, unless in open resistance; and the massacre of prisoners in cold blood, formerly thought lightly of, is now deemed a barbarity, which nothing but the most urgent circumstances, such as their uprising, or their attempted rescue by their countrymen, could justify. The slaughter of the captive Mamalukes at Jaffa has left an indelible stain on Napoleon's memory. As regards civil population and property, much amelioration of M. L. has taken place with advancing civilization. Formerly, the devastation of the country, and the destruction, accompanied even by torture, of the inhabitants, was deemed a legitimate feature of war. Now, the rule is to spare private property, to respect personal liberty, unless the inhabitants directly or indirectly aid the enemy, and to lay waste only so much ground as military necessities may require. Such at least is the principle professed; though few commanders are able to prevent their troops from occasional deeds of violence. Still another application of the term M. L. is to what may be called Military Government, when a province or town is occupied by a hostile army. This means that civil law is suspended, and all government is under military regimen; but it is impossible to define the bounds of this M. L.; nor is any more correct dictum on the subject likely to be arrived at than the celebrated saying of the Duke of Wellington, when he described it as 'the will of the commander-in-chief.'

It is evident that M. L. in all its applications (excepting that of army regulations, referred to above as Military Law) is in its nature arbitrary and open to great abuse. It supersedes civil law and civil rights; and its only, but sufficient, justification is paramount necessity. Its rudeness, promptness, and frequent violence of procedure, are in accordance with the whole terrible nature of war itself. In the United States the principle of the rightful existence of M. L. under certain circumstances is universally conceded; though some indefiniteness attaches to some of its relations to civil law while in operation, and to the subsequent accountability for certain classes of acts performed under its dictates.

MARTIGNY, *mâr-tên-yê'*, or MARTINACH, *mâr'tê-nâch* (*Octodurus* of the Romans): small town of Switzerland, canton of Valais, on the Drance, an affluent of the Rhone, about 24 m. s.s.e. from the e. end of the Lake of Geneva. The two noted routes, one to the vale of Chamouni by the Tête Noire or the Col de Balme, and another to the Great St. Bernard, branch off here. M. is on the Simplon road into Italy. It is a great resort for tourists. Pop. 4,417.

MARTIGUES, *mâr-têg'*: a small town of France, dept. of Bouches du Rhone, on three islands, united by bridges, in the entrance to the lagoon of Berre, 16 m. n.w. of

MARTIN.

Marseilles. From the peculiarity of its position, it has been called the Provençal Venice. The people are engaged largely in tunny and pilehard fishery and in the preparation of 'boutargue' from roes of the gray mullet; boutargue is a substitute for the Russian caviare. Pop. (1881) 4,682.

MARTIN, n. *mâr'tîn* [named after St. *Martin*; or simply a nickname application of the common name *Martin*: F. *martin* and *martinet*]: bird of the swallow kind in general: see SWALLOW.

MAR'TIN IV. (NICHOLAS DE LA BRIE), Pope of Rome: abt. 1210-1285, Mar. 25 (pope 1281-85); b. Touraine, France. His name is known in connection with the memorable tragedy of the 'Sicilian Vespers.' Having been from the time of his election a devoted adherent of Charles of Anjou, he supported that monarch with all his influence, and even by the spiritual censures which he had at his command, in his effort to maintain French domination in Sicily; and it is to his use of the censures of the church in that cause that many Rom. Cath. historians ascribe the decline and ultimate extinction of the authority in temporals which the papacy had exercised under the distinguished pontiffs who preceded him. His excommunication of Michael Palæologus rendered finally impossible the union of the Eastern and Western churches. He died at Perugia.

MARTIN V. (OTTO DI COLONNA), Pope of Rome: abt. 1368-1431, Feb. 20 (pope 1417-31); of one of the oldest and greatest families of Rome. On the deposition of John XXIII., and the two rival popes Gregory XII. and Benedict XIII., in the Council of Constance, Cardinal Colonna was elected: this ended the great schism of nearly 40 years (see SCHISM, WESTERN). He presided in all the subsequent sessions of the council, and the Fathers having separated without discussing the questions of reform, at that period earnestly called for in the church, Martin undertook to call a new council for the purpose. It was summoned to meet at Siena, and ultimately assembled at Basel in the year of his death. M. had learning, capacity, honesty, and moderation; but did not improve his opportunity for reforms in the church.

MAR'TIN, ALEXANDER, LL.D.: 1740-1807, Nov.; b. N. J.: statesman. He graduated at the College of N. J. 1756; studied law, and was admitted to the bar; settled in Guilford co., N. C., 1772; was a member of the colonial assembly and several popular conventions 1774-5; appointed col. 2d N. C. regt. 1776, and with it served at Germantown and on the Brandywine; member state senate 1779-82, 1785-89, several times its pres.; acting-gov. 1781; elected gov. 1782 and 89; member federal constitutional convention 1787; and U. S. senator 1793-99. He received his degree from the College of N. J. 1793; became a trustee of the Univ. of N. C., and published several poems.

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MARTIN, *mâr-lăng'*, BON LOUIS HENRI: French historian and novelist, 1810-1883, Dec. 14; b. St. Quentin; was educated as a notary, but entered on a literary career 1830. His first productions were novels and historical romances. He planned a history of France which should consist of extracts from histories and chronicles, connected by explanatory paragraphs from different writers; but soon resolved on a more original work—his now well-known and standard *History of France* (Paris 15 vols. 1833-36). A third ed., much improved, appeared 1837-54; fourth ed. 1855-60. M. acted for a time as maire of one of the arrondissements of Paris; and was chosen deputy for Aisne 1871, when he voted with the Left. He was elected a member of the French Academy. He wrote several minor histories, e.g., *Histoire de Soissons* (1857), *Daniel Manin* (1859), *Jeanne D'Arc* (1875); and was a regular contributor to liberal periodical literature. The third ed. of his large history contained a new copious statement of the history and origin of the ancient Gauls, the development of the French language and literature, and the aspects of mediæval life and manners. It is without doubt the best work dealing in detail with the history of France as a whole. It shows impartiality and insight, is excellently arranged, and admirably written.

MARTIN, JOHN,: an English painter, 1789, July 19—1854, Feb. 17; b. Haydon Bridge, near Hexham, Northumberland. He went to London 1806, and made his first appearance as an exhibitor at the Royal Acad. 1812. His picture, entitled *Sadak in Search of the Waters of Oblivion*, attracted much notice. It was followed within two years by the *Expulsion from Paradise*, *Clytée*, and *Joshua Commanding the Sun to Stand Still*. This last, though popularly successful, was the cause of a quarrel with the Acad., which cut him off from any of its honors. Till near the close of his life, he painted pictures in a style considered 'sublime' by the sort of people who thought Montgomery's *Satan* and Pollok's *Course of Time* equal to *Paradise Lost*. The principal of these sublime productions are *Belshazzar's Feast* (1821); *Creation* (1824); *The Deluge* (1826); *The Fall of Nineveh* (1828); *Pandemonium* (1841); *Morning and Evening* (1844); *The Last Man* (1850). M. died of paralysis while painting in the Isle of Man.

MARTIN, SAINT: Bishop of Tours: abt 316—abt. 400; b. Sabaria, in Pannonia, of heathen parents. He was educated at Pavia, and at the desire of his father, who was a military tribune, entered the army, first under Constantine, afterward under Julian the Apostate. The virtues of his life as a soldier are the theme of more than one interesting legend. On obtaining his discharge from military service, M. became a disciple of Hilary, Bp. of Poitiers (q.v.). He returned to his native Pannonia, and converted his mother to Christianity, but he himself endured much persecution from the Arian party at that time dominant; and in consequence of the firmness of his Christian profession, he is the first who, without suf-

MARTIN—MARTINA FRANCA.

fering death for the truth, has been honored in the Latin Church as a confessor of the faith. On his return to Gaul, about 360, he founded a convent of monks near Poitiers, where he led a life of great austerity and seclusion; but 371 he was drawn by force from his retreat, and ordained Bp. of Tours. The fame of his sanctity, and his repute as a worker of miracles, attracted crowds of visitants from all parts of Gaul; and to avoid the distraction of their importunity, he established a monastery near Tours, in which he resided. He d. at Candes. His life by his contemporary, Sulpicius Severus, is a very curious specimen of the Christian literature of the age, and in the profusion of miraculous legends with which it abounds, might take its place among the lives of the mediæval or modern Roman Church. The only extant literary relic of M. is a short *Confession of Faith on the Holy Trinity*, published by Galland, VII. 559. In the Rom. Cath. Church, the festival of his birth is celebrated Nov. 11; and he is regarded as the patron saint of France. In Scotland, this day is one of the quarter-days for paying rent, and it marks the winter-term, called *Martinmas* (the mass of St. Martin). St. Martin's day took the place of an old pagan festival; and formerly in parts of Germany, and elsewhere, people used to begin St. Martin's Day with feasting and drinking; hence the French expressions *martiner* and *faire la St. Martin*, 'to feast.' A curious result has been that St. M. has been regarded as the patron saint both of jovial meetings and of reformed drunkards.

MARTIN, Sir THEODORE, LL.D.: author: b. Edinburgh, 1816. He was educated at the High School, and studied law at the Univ. of Edinburgh. In 1846 he became a parliamentary solicitor in London. He edited Sir Thomas Urquhart's translation of Rabelais's *Gargantua and Pantagruel* (1838). In 1845 appeared *Bon Gaultier Ballads*, joint production of M. and Prof. Aytoun; his translation of *Poems and Ballads of Goethe* (1858); *Danish Dramas* (1857); *Odes of Horace* (1860); enlarged ed. 2 vols. 1882); Dante's *Vita Nuova* (1862); *Faust* (1865); *Life of H. R. H. the Prince Consort*, 5 vols. (1874-80). In 1880 M. was made a K.C.B., received the degree LL.D. from Edinburgh, and was elected rector of the Univ. of St. Andrews. He has since published a volume on the Shakespeare-Bacon controversy, *Life of Lord Lyndhurst*, and a translation of Schiller's *Song of the Bell*. He accompanied the queen to Wales by invitation 1889.

MARTINA FRANCA, *mâr-te'nâ frân'kâ*, or MARTINA: city in the Italian province of Lecce, on a hill 18 miles n.n.e. of Taranto. Its ducal palace, in the style of the great Roman palace Pamphili, is one of the finest palaces in Italy. Pop. (1881) 14,500.

MARTINDALE—MARTINEAU.

MARTINDALE, *mâr'tin-dāl*, JOHN HENRY: 1815, Mar. 20—1881, Dec. 13; b. Sandy Hill, N. Y.: soldier. He graduated at the U. S. Milit. Acad. 1835; resigned 1836; studied law, was admitted to the bar, and began practicing in Batavia, N. Y., 1838; was dist.atty. of Genesee co. 1842-45 and 1847-51; practiced in Rochester 1851-61; appointed brig.gen. vols. 1861, Aug. 9; distinguished himself as brigade commander during the Peninsular campaign 1862; milit. gov. of the D. C. 1862, Nov.—1864, May; commanded a div. in the operations s. of Richmond and the siege of Petersburg; and commanded the 18th army corps on the Appomattox line till forced to resign by ill-health 1864, Sep. 13. He was brevetted maj.gen. vols. for Malvern Hill, was atty.gen. of N. Y. 1866-68, and vice-pres. of the board of managers of Soldiers' Homes many years.

MARTINEAU, *mâr'té-nō*, HARRIET: English authoress: 1802, June 12—1876, June 27; b. Norwich; of Huguenot extraction; sister of James M. Her education was conducted mostly at home: as a girl she was a lover of books, and amused her solitary hours by committing her thoughts to paper. The deafness which she suffered from her youth, and which became confirmed about her 20th year, no doubt strengthened her habits of study, and had much to do with the working out of her career. The life in her home has been characterized as 'industrious, intellectual, and austere.' She appeared in print (in a religious Unitarian periodical, the *Monthly Repository*) before she was out of her teens, and when, 1829, she and her sisters lost their small possessions by the failure of the house in which their money was placed, she continued to write, but under the new necessity of earning a livelihood. The subjects on which her pen was exercised were very varied, including some—e.g., politics—rarely before attempted by women. Her first vol., *Devotions for Young People*, appeared 1823; followed 1824 by *Christmas Day*, a tale; and by *The Friend*, a sequel (1825). In 1826, she published *Principle and Practice*, and *The Rioters*; and for two years thereafter she was busily engaged writing stories and a series of tracts on social matters, adapted mainly for working-people. In 1830, she produced *Traditions of Palestine*, and the Assoc. of Unitarian Dissenters awarded her prizes for essays on the following subjects: *The Faith as unfolded by many Prophets*, *Providence as manifested through Israel*, and *The Essential Faith of the Universal Church*. Her next important literary venture was unique, and for a woman of that time almost audacious, *The Illustrations of Political Economy*, a series of tales, which met great and deserved success; and was followed by others illustrative of *Taxation*, and by *Poor-Law and Paupers*. In 1834, she crossed the Atlantic, and published *Society in America* (1837). Her brave and strong advocacy (in the *Westminster Review*) of the despised Abolitionist cause in the United States gave deep offense on both sides of the sea. In 1839 she published *Deerbrook*, and 1840, *The Hour and the Man*. She

afterward produced a series of tales for the young, the best known of which are *Feats on the Fiord*, and *The Crofton Bogs*. During 1839-44, when she was more or less an invalid, she wrote *Life in the Sick-room*. Her recovery she attributed to mesmerism, an avowal which was the cause of a fierce discussion in the scientific world, and exposed her to much ridicule. On her recovery she published *Forest and Game-Law Tales*. In 1846, she visited Palestine, and collected materials for *Eastern Life, Present and Past*, which she published on her return. Afterward, she completed Knight's *History of England during the Thirty Years' Peace*. In 1851, in conjunction with H. G. Atkinson, she published a series of *Letters on the Laws of Man's Social Nature and Development*, and 1869, *Biographical Sketches* (collected from the *Daily News*). The long catalogue of her literary labors (she wrote more than 100 books) includes her translation of Comte's *Positive Philosophy*; *Household Education*; *Health, Husbandry, and Handicraft*, etc. M. was a constant contributor to the large reviews and the daily and weekly press. Her *Autobiography*, written and printed many years before, was published with additional editorial vol. 1877.

Miss M. was earnest and frank; with a clear and keen but narrow intellect; lacking originality, but with much power of popular presentation, and with singular gift for sound judgment in matters merely practical. The imaginative element seems scarcely to have had a place in her mind, whose tendency was to move in a cold rationality, starting from some prejudice: this comported with a certain hardness and sternness of temper. As the years went on her creed developed into philosophical atheism—virtually materialism; not denying a first cause of things, but declaring inadmissible in reasonable human thought the being of a personal God or the expectation of any personal life beyond the grave.—Her deafness has been called her advantage; saving her time and strength from the distractions of social life which her wide reputation would otherwise have brought; also making her and her ear-trumpet the central point in such company as she favored with her presence.

MARTINEAU, JAMES, D.D., LL.D.: Unitarian minister, and writer: b. Norwich, England, 1805, Apr. 21; bro. of Harriet M. He was pastor of Unitarian congregations in Dublin and Liverpool; was for many years prof. in Manchester New College, and removed to London when that institution was transferred thither 1858, becoming one of the pastors of the chapel in Little Portland street. He became principal of the college 1868; and retired from the pastorate of the chapel 1874. He was one of the founders of the *National Review*, and has been a frequent contributor to its pages. This periodical may be taken as generally representing his theological views, which are those of the earlier Unitarianism, in M.'s case devoutly held in a most sweet and gracious spirit. M. is one of the most earnest and lofty of religious writers of this century. He is deeply read in German theology and

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philosophy: was remarkable for strong grasp of thought and power of subtle analysis; was a master of English style, and was scarcely surpassed in power of elucidating the most abstract thought. His principal works are *Rationale of Religious Inquiry* (1836); *Endeavors after the Christian Life* (1843); *Miscellanies* (1852); *Studies of Christianity* (1858); *Essays, Philosophical and Theological* (1869); *Religion and Modern Materialism* (New York 1874); *Hours of Thought on Scripture Things* (1876-80); *A Study of Spinoza* (1882, 3); and *Types of Ethical Theory* (1885, 6). His services to the common spiritual Christianity as against all forms of modern materialism are recognized in all sects as of high and permanent value. He received the degree LL.D. from Harvard 1872, TH.D. from Leyden, Holland, 1875, and D.D. from Edinburgh 1884. He died 1900, Jan. 12.

MARTINELLI—MARTINIQUE.

MARTINELLI, *mâr-tî-ně'l'î*, SEBASTIAN, Monsignor; papal apostolic delegate to the U. S.: 1848, Aug. 20—
—————; b. in parish of Santa Anna, near Lucca, province of Tuscany, Italy. At the age of 15 he entered the order of Augustinians; made his solemn profession 1865; was ordained to the priesthood 1871. He became a consultant in the Congregation of the Holy Office. In 1889, without having passed through the offices of prior and provincial, he was nominated prior-general of the Hermits of the Order of St. Augustine. In 1894 he presided over the chapter of the Augustinian Order which was held in Bryn Mawr, Penn., and visited Ireland in 1891 to preside over the Irish chapter of that order. In 1896 he was chosen by Pope Leo XIII. to succeed Cardinal Satolli as apostolic delegate in the United States; recalled 1902.

MARTINET, n. *mâr'tîn-ět*: in *milit. language*, a strict disciplinarian; a teasing pedant in the minutiae of dress and discipline—a term derived from General *Murtinet*, of the time of Louis XIV. of France. *Note*.—The word may be a dim. of *Martin*, formerly the name for an ass.

MARTINETS, n. plu. *mâr'tîn-êts* [F. *martinet*]: small lines fastened to the back of a sail.

MARTINGALE, n. *mâr'tîn-gâl* [F. *martingale*—from *Martigues* in Provence, the inhabitants having been the first to wear stockings *à la martingale*: It. *martingala*, an old kind of hose]: a strap passing from the nose-band of a horse, between the fore legs, to the girth; part of a ship's rigging.

MARTINI-HENRY RIFLE: see RIFLED ARMS.

MARTINIQUE, *mâr-tî-něk*, or MARTINICO, *mâr-te-ně'kō*, called by the natives MADIANA: one of the W. India Islands, in the chain of the Lesser Antilles, 33 m. s. of Dominica; 43 m. long, about 19 m. broad; of about 380 sq. m., and (1901) 203,781 inhabitants, of whom about 90,000 are black. The island was discovered by Columbus, 1502, June 15; colonized by the French 1635, and now belongs to France. It is of oval form, with much indented coasts, and everywhere mountainous; the highest peak, Mount Pelée, being 4430 ft. above sea-level. There are six extinct volcanoes on the island, one with an enormous crater. The cultivated portion of M. (about one-third of the whole) lies chiefly along the coast. The climate is moist, but, except during the rainy season, is not unhealthful, and the soil is very productive. Of the land in cultivation, about three-fifths are occupied with sugar-cane. Slavery was abolished 1848. A floating dock was opened 1867, at Fort-de-France, the capital (formerly Fort Royal—pop. abt. 12,000); telegraph line thence to the former chief commercial town, St. Pierre (q.v.), was opened 1866; and since then a railway was built. Mount Pelée, after being quiescent for 51 years, broke out in violent eruption in 1902, May. On the 8th it totally destroyed St. Pierre, causing the loss of about 30,000 lives, and later in month destroyed number of smaller places.

MARTIN MAR PRELATE—MARTIUS.

MARTIN MAR PRELATE, **CONTROVERSY OF**: based on seven tracts secretly published in England between 1588, Nov., and 1589, July, by 'Martin Mar Prelate, Gentleman,' in which the queen, bishops, and all the clergy of the English Church were attacked, 'assailed with every kind of contumely.' Whoever the author was, he vigorously defended in them the most extreme independency; and the secrecy of their publication and boldness of language obtained for them a wide circulation. The name of the alleged author was unquestionably fictitious. Various, but uniformly unsuccessful, efforts were made to establish the authorship. Messrs. Udal and Penry, both Independent ministers, were charged with the authorship and tried, but neither would make any disclosures. In Dexter's *Congregationalism as Seen in Its Literature*, the author ascribes their authorship to Henry Barrowe and their publication to John Penry.

MARTINMAS, n. *mâr'tin-mas* [*Martin*, and *mass*]: St. Martin's day (Nov. 11); also the winter term then beginning: see **MARTIN**, **SAINT** (Bp. of Tours).

MARTINSBURG, *mâr'tinz-bérg*: town, cap. of Berkeley co., W. Va.; on the Baltimore and Ohio and the Cumberland Valley railroads; 80 m. w. of Washington, 100 m. w. of Baltimore. It contains co. court house, town hall, 12 churches, 8 schools, 2 female seminaries, agricultural fair grounds, 2 national banks (cap. \$200,000), large repair shops of the Baltimore and Ohio railroad company, iron foundry, planing and flour mills, carriage and furniture factories, distillery, and several daily and weekly newspapers. Pop. (1890) 7,226; (1900) 7,564.

MARTIN'S FERRY: city, cap. of Belmont co., O.; on the Ohio river, nearly opposite Wheeling, W. Va.; and on the Wheeling and Lake Erie, the Pittsburg and Cleveland, and the Cleveland Lorain and Wheeling railroads. It contains glass-works said to be the largest in the United States, has extensive iron and steel works, and manufactures stoves and agricultural implements, nails, barrels, engines, etc. Pop. (1890) 6,250; (1900) 7,760.

MARTIUS, *mâr'tsē-ús*, **CARL FRIEDRICH PHILIPP VON**: German botanist and traveller in Brazil: 1794—1868; b. Erlangen. He studied medicine at Erlangen; and 1817 went to Brazil as member of a scientific expedition sent out by the Austrian and Bavarian governments. These works are: *Reise nach Brasilien* (3 vols. Munich 1824-31); *Nova Genera et Species Plantarum* (3 vols. Munich 1824-32); *Icones Plantarum Cryptogamicarum* (Munich 1828-34). He published also a most valuable monograph of palms, *Genera et Species Palmarum* (3 vols. Munich 1823-45). He is author also of works on tropical America, e.g., *Die Pflanzen und Thiere des tropischen Amerika* (Munich 1831); *Das Naturell, die Krankheiten, das Arztthum, und die Heilmittel der Urbewohner Brasiliens* (Munich 1843); *Systema Materiae Medicæ Vegetabilis Brasiliensis* (Leip. 1843). He was prof. of botany and director of the Botanic Garden at Munich.

MARTLEMAS—MARTYN.

MARTLEMAS, n. *mârt'l-mās*: a corrupt OE. spelling for MARTINMAS.



Martlet.

MARTLET, n. *mârt'lêt* [*F. martinet*, a dim. of *Martin*, a martin]: kind of swallow; in *her.*, a fanciful bird, shaped like a martin or swallow, with long wings, very short beak and thighs, and (except in the earliest heraldry) no visible legs; given as a mark of cadency to the fourth son; also otherwise used as a charge.

MARTOS, *mârt'los*: town of Andalusia, Spain, 16 m. s.w. of the city of Jaen, on a steep hill crowned by an old castle. It is resorted to for its sulphurous springs as remedy for cutaneous diseases. Pop. (1877) 14,654.

MARTYN, *mârt'lin*, HENRY: 1781, Feb. 18—1812, Oct. 16; b. Truro, England: missionary. He graduated at St. John's College, Cambridge, 1801; was chosen fellow 1802; ordained deacon in the Anglican Church 1803; priest 1805; appointed a chaplain of the E. India Company, and sailed for Madras 1805, July 17. He reached Calcutta 1806, Apr., and his first station at Dinapore in Sep. His great work in India was performed at the milit. stations of Dinapore and Cawnpore, and in the space of less than 4½ years. He readily acquired proficiency in the Hindostanee language, and was thus enabled to labor among the natives, as well as among the soldiers and English residents. He applied himself closely to preparing translations of the Scriptures and other religious works in the vernacular, and by 1807, Feb., he had finished a translation of part of the *Book of Common Prayer*. This was soon followed by a *Commentary on the Parables*. In 1808 he finished an idiomatic Hindostanee version of the New Test.; and the great utility of this work led influential friends to urge on him the preparation of a Persian version, which he tediously accomplished, but at the cost of his life. His health failing, he determined to return to England to recuperate 1811, but on the way stopped at Shiraz, Persia, where he finished his Persian New Test. 1812, Feb., and spent 6 months in preparing a Persian version of the Psalms. At Shiraz and Tebriz he held public disputations with the doctors of Mohammedan law, and answered the defense of Mohammedanism with a defense of Christianity delivered in the vernacular. He resumed his journey, starting on horseback toward Constantinople, 1,500 m. distant. This journey under the burning sun of Asia Minor proved too much for his frail constitution, further debilitated by fever and ague, and at Tocat, amid strangers, he passed to his eternal reward. His remains were buried in the Armenian cemetery at Tocat, and a monument was erected over them 1823. See *Memoir of Rev. Henry Martyn*, B.D. (London 1819: 81); *Sermons of Henry Martyn* (Boston 1822); *Journal and Letters of Henry Martyn* (2 vols. London 1827); and *Henry Martyn* (New York 1881).

MARTYR.

MARTYR, n. *mâr'tér* [Gr. *martur*, a witness: It. *martire*; Sp. *martir*; F. and AS. *martyr*, a martyr]: one who bears witness to his belief by suffering persecution or death for it, especially applied to religious belief; one who suffers persecution or death in defense of any cause; one suffering from some very severe bodily disease: V. to subject to extreme persecution, or to put to death, on account of belief or opinions; to torment; to murder. **MAR'TYRING**, imp. **MAR'TYRED**, pp. *-têrd*: **ADJ.** persecuted or put to death for one's belief, especially for one's religious opinions. **MARTYRDOM**, n. *mâr'tér-dŭm*, the death or sufferings of a martyr.—*Martyr* is specially the name in ecclesiastical history for those who, by fearless confession of Christ, and especially by fortitude in submitting to death itself rather than deny their Lord, bore the 'witness' of their blood to the superhuman origin of the Christian faith. Of this use of the word, there are examples also in the New Test., Acts xxii. 20; Rev. ii. 13; xvii. 6; though this meaning, as its technical and established signification, is derived mainly from ecclesiastical writers. During the Persecutions (q.v.) of the Christians in the first three centuries, contemporary writers, pagan and Christian, record that many Christians, preferring death to apostasy, became martyrs or witnesses in blood to the faith, often with utmost heroism. The courage and constancy of the sufferers won the highest admiration from the brethren. It was held a special privilege to receive the martyr's benediction, to kiss his chains, to visit him in prison, or to converse with him; and, as it was held that their great and superabundant merit might, in the eyes of the church, compensate for the laxity and weakness of less perfect brethren, a practice gradually arose by which the martyrs gave to those sinners who were undergoing from the church a course of public penance, letters of commendation to their bishop, in order that their course of penance might be shortened or suspended altogether: see **INDULGENCE**. The day of a martyrdom, moreover, as the day of the martyr's entering into eternal life, was called the 'natal' or 'birth' day, and was celebrated with peculiar honor and special religious services. Their bodies, clothes, books, and other objects which they had possessed were honored as **RELICS** (q.v.), and their tombs were visited for the purpose of asking their intercession: see **INVOCATION**. The number of martyrs who suffered death during the first ages of Christianity has been a subject of great controversy. The ecclesiastical writers, with natural pride of partisanship, have, it can hardly be doubted, been led into exaggeration. Some of their statements are palpably excessive; and Gibbon, in his well-known 16th chapter, throws great doubt even on the most moderate computations of the old church historians. But it is clearly though briefly shown by Guizot in his notes on this celebrated chapter (see Miiman's *Gibbon's Decline and Fall*, I. 598), that Gibbon's criticisms are founded on unfair and partial data, and that even the authorities on which

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he relies demonstrate the fallaciousness of his conclusions. The subject is discussed with much learning and considerable moderation in Ruinart's *Acta Primitiva et Sincera Martyrum*. Considerable difference of opinion also has existed as to what, in exploration of the ancient Christian tombs in the Roman catacombs, are to be considered as signs of martyrdom. The chief signs, in the opinion of older critics, were (1), the letters B. M.; (2), the figure of a palm-tree; and (3), a phial with the remains of a red liquor believed to be blood. Each of these has been the subject of dispute, but the last is commonly regarded as the conclusive sign of martyrdom. The first recorded martyr of Christianity, called the 'proto-martyr,' was the deacon Stephen, whose death is recorded Acts vi., vii. The proto-martyr of Britain was Alban of Verulam, who suffered under Diocletian 286 or 303.

MARTYROLOGY, n. *mâr'lér-ôl'ô-jĩ* [Gr. *martur*, a witness; *logos*, a discourse]: history or register of martyrs; calendar of martyrs and other saints arranged in the order of months and days; intended partly to be read in the public services of the church, partly for the guidance of the devotion of the faithful toward the saints and martyrs. The use of the M. is common to the Latin and to the Greek Church, in the latter of which it is called *Menologion* (from *Mēn*, a month) or 'month-calendar,' sometimes *Analogion*. The earliest *extant* Greek M. or menology dates from the 9th c., published 1727 by Cardinal Urbini. The oldest M. known of, was Eusebius's collection of records of persecutions; and his treatise *On the Martyrs of Palestine*, preserved in an anc. Syriac version ed. by Cureton. Next has been placed as the oldest Latin M., the calendar of saints' days attributed to Jerome, published in the 11th vol. of the collected ed. of his works by Vallars; but the genuineness at least of portions of it is more than doubtful. A later M., said to be by Jerome, is merely a rude patchwork, from many ancient church calendars; yet this seems the basis of all martyrologies since in the Western Church. In the mediæval period martyrologies were issued in England by Venerable Bede; in France by Florus, Ado and Usuard; and in Germany by St Gall, Nolter, and Rabanus Maurus. The so-called 'Roman Martyrology' is designed for the entire church, and was published by authority of Gregory XIII., with a critical commentary by the celebrated Cardinal Baronius 1586; a still more critical edition was issued by the learned Jesuit, Herebert Rosweid. MAR'TYROLOG'ICAL, a. -*lôj'ĩ-kāl*, pert. to martyrs. MAR'TYROL'OGIST, n. -*ôl'ô-jĩst*, a writer of an account of martyrs.

MAR'RUM, or MAR'RAM: see AMMOPHILA.

MARUT, *mâ'rût*, Hind. *mūr'ût*: in Hindu mythology, the god of wind; his wife is Anjanâ, and his son Hanumân (q.v.). Bhîma, the second of the Pân'd'u princes (see MAHÂBHÂRATA), is likewise considered an offspring of this god.

MARVEL—MARWAR.

MARVEL, n. *mâr'vêl* [F. *merveille*, a marvel—from It. *maraviglia*—from L. *mirabiliâ*, wonderful things: comp. Gael. *miorbhail*, a wonder]: something astonishing or wonderful: V. to wonder; to be astonished. **MAR'VEL-LING** imp. **MAR'VELLED**, pp. -*vêld*. **MAR'VELLOUS**, a. -*vêl-ûs*, wonderful; astonishing; surpassing credit or belief. **MAR'VELLOUSLY**, ad. -*ûs-lî*. **MAR'VELLOUSNESS**, n. -*nês*, the quality of being wonderful or strange. **THE MARVELLOUS**, that which exceeds nature, or is improbable.—**SYN.** of 'marvel, n.': wonder; prodigy; surprise; miracle; monster; admiration; astonishment; incredibility.

MARVELL, *mâr'vêl*, **ANDREW**: English political writer, and satirist: 1621, Mar. 31—1678, Aug. 16; b. Winestead, Yorkshire; his father being master of Hull Grammar-school and lecturer of Trinity Church. He studied at Trinity College, Cambridge, and spent several years in various parts of the continent, 'to very good purpose,' according to his friend, John Milton. He returned to England 1646; in 1652, was employed by Oliver Cromwell as tutor to his nephew, a Mr. Dutton; in 1657, became assist.-sec. to Milton; and 1658, was chosen by Hull to represent it in parliament. M.'s parliamentary career was both singular and honorable. Without fortune or influence, possessing no commanding talent as a speaker, he maintained a character for integrity, so genuine and high that his constituency felt itself honored by his conduct, and allowed him to the end of his life 'a handsome pension.' Otherwise, it would have occasionally fared ill with this incorruptible patriot, for he was often reduced to great pecuniary straits. He accepted the Commonwealth as the actual government, but never changed his preference for monarchy. Yet in the venal and corrupt period following the restoration, M. refused to join the general chorus of flatterers of the royal proceedings. Charles II. made many fruitless efforts to win M. over to the court-party. The story of the interview between M. and his old school-fellow, the lord treasurer Danby, who had found out the patriot's lodgings (with difficulty) 'up two pair of stairs, in one of the little courts in the Strand,' is believed to be essentially true, and indicates a certain noble republican simplicity of nature. M. was tolerant in religion, broad-minded in politics, and morally pure in a society fearfully corrupt. His writings, partly in verse, and partly in prose, are satirical, sharp, honest, and pithy (like his talk), but they relate to matters of temporary interest, and are now seldom read. The best edition is the Rev. A. B. Grosart's (4 vols. 1872-75).

MARVEL OF PERU: see **JALAP**.

MARVER, n. *mâr'vêr* [F. *marbre*, a correcting-stone among printers—from L. *marmörem*, marble]: a slab of cast-iron upon which a small quantity of hot glass from the crucible is rolled to give it a regular form, that the glass when blown may have a uniform thickness.

MARWAR': see **JOUDPORE**.

MARX.

MARX, *mârks*, KARL: one of the foremost promoters and organizers of modern socialism: 1818-1883, Mar. 14; b. Trier, Prussia. He studied at Berlin and Bonn; and passing from the latter university 1843 with high honors, commenced his career as a journalist. and at once became a leader of the socialist movement. For a time he edited the *Rheinische Zeitung* at Cologne; on its suppression he went to Paris assisted Ruge in the production of the *German-French Annuals*, and was associated with Heine in issuing *Vorwärts*. He was successively expelled from Paris and from Brussels; and 1849 he finally settled in London, where he died. Socialism owes its present position largely to the exertions of Lassalle (q.v.), Engels, and M.; the latter by his knowledge of languages awaking an interest in its favor abroad, which resulted in his successfully founding the International Working Men's Society 1864. The 'International' aimed at a reconstruction of society in favor of the claims of labor as against those of capitalists: till 1789, aristocracies governed; since then, the bourgeoisie; now it was time for the working-classes in all lands to exert the supreme power. The society was originally composed mainly of English and French workmen, but M. grafted it upon that of the German Social Democrats 1869. The society grew rapidly at first, but in recent years has given place to other agencies—some more destructive, and proclaiming the wildest extreme of political doctrine; others proposing only peaceful though complete reconstruction of social economies: see INTERNATIONAL, THE. His most important works are: *Die Heilige Familie* (1845); *Misère de la Philosophie*; *Zur Kritik der Politischen Economie* (1859); and especially *Das Kapital* (1867, unfinished; 2d ed. 1872), an attempt to refute the prevailing system of political economy, by denying most of the premises on which economists usually base their doctrines. One notable contention of his is that 'accumulation of capital is the multiplication of the proletariat.' M. was not merely the great theorist of modern socialism; but like Louis Blanc (q.v.) and Lassalle (q.v.), a representative of what is now known as *Social Democracy*—a distinctly political institution, affirming that progress on the existing basis of society is impossible, aiming at a social revolution, and seeking to use the power of the state to reorganize society on a socialistic basis.]

MARY.

MARY, THE BLESSED VIRGIN (Heb. *Miriam*, Gr. *María* or *Mariam*): called in the New Testament 'the mother of Jesus' (Matt. ii. 11; Acts i. 14). As the mother of the Lord Jesus according to the flesh, she is held in honor by all Christians: this honor has taken on such development in the Roman Church, and in the churches of the East—the Greek, Syrian, Coptic, Abyssinian, Arminian—that the intercession of the Virgin is invoked with a higher religious worship and a firmer confidence than that of all the other saints. Of this worship no hint is given in the New Testament; and its prominence in the church dates from the council of Ephesus, 431.—Of the Virgin's personal history, few particulars are recorded in Scripture. Some details are filled up from the works of the early Fathers, especially their commentaries or deductions from the scriptural narrative; some from the apocryphal writings of the first centuries, and some from mediæval or modern legends. The twofold genealogy of our Lord (Matt. i. 1-16; Luke iii. 23-38) contains the only statement regarding the family of M. which the sacred writers have left. From this it is known that the Virgin was of the same tribe with her husband Joseph—the tribe of Judah, and of the royal lineage of David (see Ps. cxxxii. 11; Luke i. 32; Rom. i. 3); that she had a sister, probably of the same name with herself, Mary (Jn. xix. 25); and that she was connected by marriage, with Elisabeth, who was of the tribe of Levi and lineage of Aaron. All beyond this concerning her antecedents and family, is tradition, and of little weight. The incidents in her personal history recorded in Scripture are few in number, and almost entirely refer to her relations with the Lord Jesus: see Matt. i.; ii.; xii.: Luke i.; ii.: John ii.; xix.: Acts i., where the last notice of her is of her 'continuing steadfastly in prayer' with the disciples and the holy women at Jerusalem after the Lord's ascension (Acts i. 14). Beyond these few facts, the Scripture is silent as to the life of M. during the presence of the Lord Jesus on earth; nor of her later life is there any record whatever in the canonical Scriptures. The apocryphal gospels, entitled 'The Gospel of the Nativity of Mary,' and the 'Protevangelion of the Birth of Christ,' contain some additional, but, of course, unauthentic and legendary particulars as to the lineage, birth, and early years of M.; among which is the miraculous story of her betrothal with Joseph, immortalized by the pencil of Raphael, according to which narrative Joseph was selected from among all who had been proposed as suitors for the hand of M. by the supernatural sign of a dove issuing from his rod and alighting upon his head (see the *Protevangelion*, cap. viii.). As to her history after the ascension of her Son, the traditions differ widely. A letter ascribed to the Council of Ephesus speaks of her as having lived with John at Ephesus, where she died, and was buried. Another epistle, nearly contemporaneous, tells that she died and was buried at Jerusalem, at the foot of the Mount of

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Olives. Connected with this tradition is the incident, so frequent a subject of sacred art, of the apostles coming to her tomb on the third day after her interment, and finding the tomb empty, but exhaling an 'exceeding sweet fragrance.' On this tradition is founded the belief of her having been assumed into heaven, which is celebrated in the festival of the Assumption. The date of her death is commonly fixed A.D. 63, or, according to another account, 48. Another tradition makes her survive the crucifixion only 11 years.

Many theological questions regarding the Virgin M. have been raised among Christians of the various churches. One of these has recently been prominent before the Christian world: see IMMACULATE CONCEPTION. The perpetual virginity of M. is not explicitly attested in Scripture, and there are even certain phrases which seem to imply that children were born of her after the birth of Jesus; e.g., where Jesus is called (Matt. i. 25; Luke ii. 7) her '*firstborn son*,' and where James and others are more than once called '*brothers of the Lord*.' On the latter argument, no critic acquainted with the wide scriptural use of the word '*brother*' would place positive reliance. The former argument, urged anciently by Helvidius and others, has never had wide acceptance, and is not a settlement of the question. The perpetual virginity of M. is held as a firm article of belief in the Roman and Eastern churches. Protestants hold nothing positively on the subject, refusing to accept the perpetual virginity as a fact for lack of historical proof, and perhaps tending usually to favor the negative. The controversies regarding the Virgin M. have reference to the lawfulness of the worship which is rendered to her in some Christian communities: see MARIOLATRY.

MARY I., Queen of England: 1516, Feb. 18—1558, Nov. 17 (reigned 1553–58); b. Greenwich; daughter of Henry VIII. by his first wife, Catharine of Aragon. She was in her early years a favorite with her father, who had her carefully educated after the masculine fashion of her time. Erasmus praises particularly the style of her Latin letters. At the age of seven, she was betrothed to Emperor Charles V. of Spain; but when Henry sought a divorce from Queen Catharine, the Spanish monarch broke off the engagement. Her father then tried to marry her to Francis I. of France, but his design did not succeed. Francis, however, asked her for his second son, the Duke of Orleans, but Henry in turn refused. After the birth of Elizabeth, Henry's affections were diverted to that princess; and when James V. of Scotland sought the hand of M., it was refused, on the ground that the issue of such union might imperil the right of Anne Boleyn's children to the crown. This was virtually condemning M. to celibacy, and doubtless had the effect of making her still more attached to the Rom. Cath. party, to which, on account of her training, her natural tendencies, and the wrongs of her mother, she was already closely allied. Several other matrimonial negotiations, with the Prince of Portugal, the Duke of

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Cleves, and the Duke of Bavaria, also came to nothing. About this time, she was in great danger of losing her life, on account of her strong attachment to her mother's interests and maintenance of her rights. The unfortunate princess had a wretched childhood, repeatedly offered and withdrawn in the matrimonial market, compelled by a brutal father to acknowledge the illegitimacy of her birth, and forbidden to see her mother—even for farewell at her death. Toward the close of Henry's reign, better prospects opened for her. She was induced to make a humble submission to her father, in terms which were abhorrent but which made her life tolerable; and in 1544, she was restored to her place in the line of succession, of which she had been deprived; and she lived on very good terms with Catharine Parr, the last of her father's numerous wives. During the reign of her half-brother, Edward VI., she lived in retirement, but had three more offers of marriage—from the Duke of Brunswick, the Markgraf of Brandenburg, and the Infante of Portugal—none of which was accepted. On the death of Edward, 1553, she was proclaimed queen; and after a brief and imbecile struggle on the part of those who advocated the claims of Lady Jane Grey, was crowned in Oct. of the same year by Stephen Gardiner, Bp. of Winchester. A fierce spirit in favor of the papacy soon began to show itself, though it does not appear that M. herself was at first disposed to be severe; she even occasionally interfered to mitigate the cruelties of Gardiner and Bonner; but after her marriage with Philip of Spain, 1554, July 25, to whose father she had been betrothed many years before, a worse spirit took possession of her, or at least worse counsels prevailed; and those bloody persecutions of the Protestants began which have given her an odious name in history. Nearly 300 victims perished by burning—among them many of the best of England's good men—such as Rogers, Hooper, Ridley, Latimer, Cranmer. Her domestic life was wretched; Philip, whom she loved with a morbid passion, proved a sour, selfish, and heartless husband. She had no children; and exasperation and loneliness working upon a temper naturally obstinate and sullen, doubtless rendered her more compliant to the sanguinary policy of the reactionary bishops. Fortunately for England, her reign was brief. She died after much suffering from dropsy and nervous debility. Her death was pitiable, both as the friendless ending of a life that had been clouded from its beginning, and as being hailed by the nation as a deliverance. She has been made the subject of a tragedy by Lord Tennyson.

MARY (MARY STUART), Queen of Scots: 1542, Dec. 8—1587, Feb. 8 (crowned 1543; reigned 1561–67; Queen of France 1559–60): b. Linlithgow, Scotland: beautiful and accomplished, but most unhappy princess, daughter of King James V. of Scotland by his second wife, Mary of Lorraine, who was daughter of Claude, Duke of Guise.

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and widow of Louis of Orleans, Duke of Longueville. Her misfortunes may be said to have begun with her birth. Its tidings reached her father on his deathbed at Falkland, but brought him no consolation. 'The devil go with it!' he muttered, as his thoughts wandered back to the marriage with Bruce's daughter, which brought the crown of Scotland to the Stuarts—'it came from a woman, and it will end in a woman!' Mary became a queen before she was a week old. Before she was a twelvemonth old, the Regent Arran had promised her in marriage to Prince Edward of England, and the Scottish parliament had declared the promise null. War with England followed, and at Pinkie Cleuch the Scots met a defeat only less disastrous than Flodden. But their aversion to an English match was unconquerable; they hastened to place the young queen beyond the reach of English arms, on the island of Inchmahome, in the Lake of Monteith, and to offer her in marriage to the eldest son of Henry II. of France and Catharine de' Medici. The offer was accepted; and 1548, July, a French fleet carried Mary from Dumbarton, on the Clyde, to Roscoff, in Brittany, whence she was at once conveyed to St. Germain-en-laye, and there affianced to the Dauphin.

Her next ten years were passed at the French court, where she was carefully educated with the king's family, receiving instructions in the art of making verses from the famous Ronsard. At a somewhat later period, she had the great Scottish scholar Buchanan for her Latin master. 1558, April 24, her marriage with the Dauphin, who was about two years younger than herself, was celebrated with every circumstance of pomp and splendor in the Church of Notre-Dame at Paris. It was agreed on the part of Scotland, that her husband should have the title of King of Scots; but this was not enough for the grasping ambition of France: and Mary was betrayed into the signature of a secret deed, by which, if she died childless, both her Scottish realm and her right of succession to the English crown (she was great-granddaughter of King Henry VII.) were conveyed to France. 1559, July 10, the death of the French king called her husband to the throne as Francis II. The government passed into the hands of the queen's kinsfolks, the Duke of Guise and the Cardinal of Lorraine: but their rule was short-lived. The feeble and sickly king died 1560, Dec. 5, when the reins of power were grasped by the queen-mother, Catharine de' Medici, as regent for her son, Charles IX. Mary must have been prepared, under almost any circumstances, to quit a court swayed by one whom, during her brief reign, she had taunted with being 'a merchant's daughter.' But there were other reasons for her departure from France. Her presence was urgently needed in Scotland, which the death of her mother a few months before had left without a government, at a moment when it was convulsed by the throes of the Reformation. Her kinsmen of Lorraine had ambitious projects for her marriage; great schemes were based on her nearness of

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succession to the English crown; and both these, it was thought, might be more successfully followed out when she was seated on her native throne.

She sailed from Calais 1561, Aug. 15, and arrived at Leith, Aug. 19, having escaped the English ships-of-war which Elizabeth dispatched to intercept her. She wept as the shores of France faded from her sight, and her tears flowed anew when she beheld the rudeness and poverty of Scotland. Her government began auspiciously. The Reformation claimed to have received the sanction of the Scottish parliament, and if Mary did not formally acknowledge the claim, she was at least content to leave affairs as she found them, stipulating only for liberty to use her own religion—a liberty which Knox with a few extreme Reformers denounced as a sin against the law of God. She is said to have rejected the violent counsels of the Rom. Catholics; it is certain that she surrounded herself with Prot. advisers, her chief minister being her illegitimate brother, James Stuart, an able if ambitious statesman, whom she soon afterward created Earl of Murray. Under his guidance, in the autumn of 1562, she made a progress to the north, which, whatever its design, ended in the defeat and death of the Earl of Huntly, powerful chief of the Rom. Cath. party in Scotland.

Meanwhile, the courts of Europe were busy with schemes for Mary's marriage. The king of Sweden, the king of Denmark, the king of France, the Archduke Charles of Austria, Don Carlos of Spain, the Duke of Ferrara, the Duke of Nemours, the Duke of Anjou, the Scottish Earl of Arran, and the English Earl of Leicester were proposed as candidates for her hand. Her own preference was for Don Carlos, heir of what was then the greatest monarchy in Christendom; and it was not until all hopes of obtaining him were quenched, that she thought seriously of any other. Her choice fell, at first sight, on her cousin, Henry Stuart, Lord Darnley, son of the Earl of Lennox, by his marriage with a granddaughter of King Henry VII. of England. He was thus among the nearest heirs to the English crown, and his claims to the succession were believed to have the support of the great body of English Rom. Catholics. But except this, and his good-looks, he had no recommendation. He was weak, needy, insolent, vicious; his religion, such as it was, was Rom. Catholic; his house had few friends and many enemies in Scotland; and he was two or three years younger than Mary. Her best friends, both Rom. Cath. and Prot., warned her against him in vain. The marriage was celebrated at Holyrood, 1565, July 29. It was a signal for an insurrection by Murray and the Hamiltons, who hoped to be joined by the whole Prot. party. But their hope was disappointed; and the queen, taking the field in person in Oct. with 18,000 men, at once quelled the revolt, and chased the rebels beyond the Tweed.

Her triumph was scarcely over, when her eyes began to open to the great mistake of her marriage. Her hus-

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band's worthlessness and folly became apparent; she was disgusted by his debauchery, and alarmed by his arrogance and ambition. At his demand she had illegally given him the title of king, but he demanded further that the crown should be secured to him for life, and that if the queen died without issue, it should descend to his heirs. Mary hesitated to comply with a demand which would have set aside the settled order of succession; and what she refused to grant by favor, the king prepared to extort by force.

Mary's chief minister, since Murray's rebellion, had been David Riccio, a mean-looking Italian, of great ability and many accomplishments; but generally hated beyond the palace walls as a base-born foreigner, a court favorite, and a Rom. Catholic. The king and Riccio had been sworn friends, sharing the same table, even sleeping in the same bed; but the king was now persuaded that it was Riccio who was the real obstacle to his designs upon the crown. In this belief, he entered into a formal compact with Murray, Ruthven, Morton, and other chiefs of the Prot. party, undertaking on his part to prevent their attainder, or procure their pardon, and to support and advance the Prot. religion; while they, on the other part, bound themselves to procure the settlement of the crown on him and his heirs, and to take and slay, if need were, even in the queen's palace and presence, every one who opposed it. The result of this conspiracy was the murder of Riccio, 1566, Mar. 9, the king leading the way into the queen's cabinet, and holding her in his grasp, while the murderers dragged the poor Italian into an ante-chamber, and mangling his body with more than 50 wounds, completed what they believed, and Knox pronounced to be, 'a just act, and most worthy of all praise.' When Mary learned what had been done, she broke out in reproaches against the king, as to blame for all. 'I shall be your wife no longer,' she told him, 'and shall never like well till I cause you have as sorrowful a heart as I have at this present.' As had been agreed beforehand among the conspirators, Mary was kept prisoner in Holyrood; while the king, of his own authority, dismissed the parliament which was about to forfeit Murray and his associates in the late insurrection. The plot was thus far successful; but Mary no sooner perceived its objects, than she set herself at work to defeat them. Dissembling her indignation at her husband's treachery and the savage outrage in which he had been leader, she succeeded by her blandishments in detaching him from the conspirators, and in persuading him not only to escape with her from their power by a midnight flight to Dunbar, but to issue a proclamation in which he denied all complicity in their designs. The conspiracy thus came to an end; Ruthven and Morton fled to England, while Murray, by renouncing their cause, hastened to make his peace with the queen; and the king, hated by both sides, because he had betrayed

both sides, became an object of mingled abhorrence and contempt.

It was an aggravation of the murder of Riccio that it was committed, if not in the queen's presence, at least within a few yards of her person, only three months before she gave birth (1566, June 19) to the prince who became King James VI. As that event drew near, the queen's affection for her husband seemed to revive; but the change was only momentary; and before the boy's baptism, in Dec., her estrangement from the king was greater than ever. Divorce was openly discussed in her presence, and darker designs were not obscurely hinted at among her friends. The king, on his part, spoke of leaving the country; but before his preparations were completed, he fell ill of a disease, said by some to have been small-pox, but suspected by others to have been the result of poison, and was removed to Glasgow and left with his father, 1567, about Jan. 9. Jan. 25, Mary went to see him, and, travelling by easy stages, brought him to Edinburgh on the 31st. He was lodged in a small mansion beside the Kirk of the Field, nearly on the spot where the s.e. corner of the University now stands. There Mary visited him daily, and slept for two nights in a room below his bedchamber. She passed the evening of Sunday, Feb. 9, by his bedside, talking cheerfully and affectionately with him, though she is said to have dropped one remark which gave him uneasy forebodings—that it was much about that time twelvemonth that Riccio was murdered. She left him between 10 and 11 o'clock to take part in a masque at Holyrood, at the marriage of a favorite valet. The festivities had not long ceased in the palace, when, about two hours after midnight, the house in which the king slept was blown up by gunpowder; and the bodies of Darnley and a page were found strangled in a neighboring garden, to which apparently they had escaped, and where Bothwell's confederates had overtaken and murdered them.

The chief actor in this tragedy was undoubtedly James Hepburn, Earl Bothwell, a needy, reckless, vainglorious, profligate noble, who, since Murray's revolt, and still more since Riccio's murder, had received a large share of the queen's favor. But there were suspicions that the queen herself was not wholly ignorant of the plot, and these suspicions could not but be strengthened by what followed. Apr. 12, Bothwell was brought to a mock-trial, during which, as he held the castle, and had 4,000 armed men in the streets near by, the proclaimed prosecutor Lennox did not appear: thus he was acquitted by default. On the 24th, he intercepted the queen on her way from Linlithgow to Edinburgh, and carried her, with scarcely a show of resistance, to Dunbar. May 7, he was divorced from a young and comely wife whom he had married little more than a twelvemonth before; on the 12th, Mary publicly pardoned his seizure of her person, and created him Duke of Orkney; and on the 15th—only three months after her husband's murder

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—she married the man whom every one regarded as his murderer. This conscientious murderer, being a Protestant, refused to be married according to the rites of the queen's church; so she consented to the performance of the ceremony by a convert from the Roman to the Prot. faith.

This fatal marriage at once arrayed her nobles in arms against her. She was able to lead an army against them, but it melted away without striking a blow on the field of Carberry (June 15), when nothing was left to her but to abandon Bothwell, and surrender herself to the Confederated Lords. She took passionate leave of Bothwell; and while from the ranks of those into whose power she had fallen, loud cries were rising for her death as a harlot and a murderess, she declared her purpose to have every man of them hanged and crucified, and as she rode away a captive, beside Lord Lindsay, swore to him that she would have his head for this. The lords led her to Edinburgh, where the insults of the rabble and her grief at parting with Bothwell threw her into such a frenzy, that she refused all nourishment, and rushing to the window of her room in the provost's house to which she had been taken as a refuge from the fury of the mob, called for help, and showed herself to the people with dress disordered and with her hair hanging about her ears.

From Edinburgh, she was hurried to Loch Leven, where, July 24, she was prevailed on to sign an act of abdication in favor of her son, who, five days afterward, was crowned at Stirling. Escaping from her island-prison, 1568, May 2, she found herself in a few days at the head of an army of 6,000 men. On the 12th, it was met and defeated by the regent Murray at Langside, near Glasgow. Four days afterward, in spite of the entreaties of her best friends, Mary crossed the Solway, and threw herself on the protection of Queen Elizabeth, only to find herself a prisoner for life. From Carlisle, her first place of captivity, she was taken, in July, to Bolton; thence, 1569, Feb., to Tutbury; from Tutbury, she passed in succession to Wingfield, to Coventry, to Chatsworth, to Sheffield, to Buxton, and to Chartley. At several periods in her long captivity, facts came to the surface which were held to imply that she was made, either with, or without her will or knowledge, the pivot on which turned a plot for the Spanish invasion of Britain with a view to its subjugation to the Rom. Catholic dominion. She was removed, last of all, to Fotheringhay, 1586, Sep., there to be tried on a charge of complicity in a plot against the life of Elizabeth. Sentence of death was pronounced against her Oct. 25; but it was not until 1587, Feb. 1, that Elizabeth took courage to sign the warrant of execution. It had largely become the public feeling in England, that the throne and liberty of the realm were not secure while this brilliant, fearless, resolute, fascinating, ambitious, unscrupulous, dethroned queen, unfriendly to the Prot. succes-

sion, remained. The sentence was carried into effect on the 8th, when Mary laid her head upon the block with the dignity of a queen and the constancy and resignation of a martyr. Five months afterward, her body was buried with great pomp at Peterborough, whence, 1612, it was removed to King Henry VII.'s Chapel at Westminster, where it still lies in a sumptuous tomb erected by King James VI.

The character of Mary was long one of the most fiercely vexed questions of history, and is still in debate, though the great preponderance of authority is now on the side of those who believe in her criminal love for Bothwell and her guilty knowledge of his conspiracy against her husband's life. She possessed dauntless courage, high ambition, indomitable will, a nature fiercely passionate yet capable of the most winning sweetness, great capacity for intrigue, though naturally inclined rather to open, direct, and heroic methods. Her beauty and accomplishments have never been disputed. 'She was confessed by every one,'—says Joseph Robertson, one of the latest writers on her life—'to be the most charming princess of her time. Her large sharp features might perhaps have been thought handsome rather than beautiful, but for the winning vivacity and high joyous spirit which beamed through them. It has been questioned whether her eyes were hazel or dark gray, but there is no question as to their star-like brightness. Her complexion, although fresh and clear, would seem to have been without the brilliance so common among our island beauties. Her hair appears to have changed with her years from a ruddy yellow to auburn, and from auburn to dark brown or black, turning gray long before its time. Her bust was full and finely shaped, and she carried her large, stately figure with majesty and grace. She showed to advantage on horseback, and still more in the dance. The charm of her soft, sweet voice is described as irresistible; and she sang well, accompanying herself on the harp, the virginals, and still oftener on the lute, which set off the beauty of her long, delicate, white hand. The consciousness how that hand was admired may have made it more diligent in knitting and in embroidery, in both of which she excelled. Her manner was sprightly, affable, kindly, frank perhaps to excess, if judged by the somewhat austere rule already beginning to prevail among her Scottish subjects. She spoke three or four languages, was well and variously informed, talked admirably, and wrote both in prose and in verse, always with ease, and sometimes with grace, or vigor.'

Mary's prose-writings have been collected by the enthusiastic devotion of Prince Alexander Labanoff, in *Recueil des Lettres de Marie Stuart*. Setting aside the 12 sonnets which she is said to have written to Bothwell, and which survive only in a French version of an English translation, no more than six pieces of her poetry, containing in all less than 300 lines, are now known. They have no remarkable merit. The best is the poem

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of eleven stanzas on the death of her first husband, Francis II., printed by Brantôme. The longest is a *Meditation* of a hundred lines, written 1572, and published two years afterward by her ever-faithful follower, Bp. Lesley of Ross. All are in French, except one sonnet in Italian. The sweetly simple lines beginning, 'Adieu, plaisant pays de France,' so often ascribed to her, are the work of A. G. Meusnier de Querlon, French journalist, who died 1780. A volume of French verse on the *Institution of a Prince*, which she wrote for the use of her son, has been lost since 1627, with a Latin speech in vindication of learned women, which, when no more than 13 years of age, she delivered in the hall of the Louvre, in presence of the French court.

To enumerate all that has been written on Mary would fill a volume. Among the chief works are S. Jebb's *De Vita et Rebus Gestis Mariæ Scotorum Reginae* (Lond. 1725, 2 vols. fol.); J. Anderson's *Collections Relating to the History of Mary, Queen of Scotland* (Lond. 1727-8, 4 vols. 4to); Bp. Keith's *History of the Affairs of Church and State in Scotland* (Edin. 1734, fol.; 1844-50, 3 vols. 8vo); W. Goodall's *Examination of the Letters said to be written by Mary, Queen of Scots, to James, Earl of Bothwell* (Edin. 1754, 2 vols. 8vo); Principal Robertson's *History of Scotland*; W. Tytler's *Inquiry into the Evidence against Mary, Queen of Scots* (Edin. 1759, 8vo; Lond. 1790, 2 vols. 8vo); M. Laing's *History of Scotland*; G. Chalmers's *Life of Mary, Queen of Scots* (1818, 2 vols.; 1822, 3 vols.); P. F. Tytler's *History of Scotland*; Prince Labanoff's *Recueil des Lettres de Marie Stuart* (1844); David Laing's edition of *John Knox's History of the Reformation* (1846-48); Agnes Strickland's *Lives of the Queens of Scotland* (Edin. 1850-59, 8 vols. 8vo); A. de Montaignon's *Latin Themes of Mary Stuart* (Lond. 1855, 8vo); Prince Labanoff's *Notice sur la Collection des Portraits de Marie Stuart* (1856); M. Mignet's *Histoire de Marie Stuart* (1852); M. Teulet's *Lettres de Marie Stuart* (1859); M. Cheruel's *Marie Stuart et Catherine de Medicis* (1858); Robertson's *Catalogues of the Jewels, Dresses, Furniture, Books, and Paintings of Mary, Queen of Scots* (1863); Hosack's *Mary, Queen of Scots, and her Accusers* (1870-74); histories by Petit and De Flandre (1874), Chantelauze (1876), Leader (1880), and the interesting document by Claude Nau, her secretary (ed. by Father Stevenson, 1883).

The best representations of Mary are the contemporary portraits by the French painter, Francis Clouet, usually called Jehannet or Janet; and the statue, by an unknown sculptor, on her tomb at Westminster. All portraits which cannot be reconciled with these types may be rejected as spurious.

MARY (ST.) AND ALL SAINTS, LINCOLN, commonly called LINCOLN COLLEGE, Oxford: see LINCOLN COLLEGE.

MARY-BUD, n. *mā'ri-būd*, or MARY-GOLD: the mari-gold, which see.

MARY HALL (St.), Oxford: see ST. MARY HALL.

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MARYLAND, *mă'ri-länd* or *měr'î-land*: a state, one of the original 13 states in the American Union; 10th in coal, 10th in tobacco, 8th in pig iron; 16th in iron ore, 14th in value of manufactures, 26th in population, 3d in value of domestic exports; named in honor of Maria, wife of King Charles II. of England.

Location and Area.—M. is in lat. $37^{\circ}53'$ — $39^{\circ}44'$ n., long. $75^{\circ}2'$ — $79^{\circ}30'$ w.; bounded n. by Penn., e. by Del. and the Atlantic Ocean, s., s.w., and w. by Va. and W. Va., n.w. by W. Va.; extreme length e. to w. 198 m., breadth 3–120 m.; 12,210 sq. m. (7,814,400 acres); coast line 509 m.; cap. Annapolis.

Topography.—M. is naturally divided into 3 districts: the East Shore peninsula, between Chesapeake and Delaware Bays and the Atlantic Ocean; the West Shore peninsula, between Chesapeake Bay and the Potomac river; and the n. and w. region, which is traversed by the Blue Ridge and Alleghany Mountains. Both peninsulas are alluvial; the east shore being in places low and swampy, and broken and rocky; and the west shore level, sandy, and marshy, with rising terraced surface reaching the mountainous region. The central and n.w. regions are covered with rich loams and agricultural clays, a part resting on limestone strata. The coast line comprises 33 m. on the Atlantic, nearly 400 m. on Chesapeake Bay, and the remainder of the 509 m. on the adjacent islands. There are no harbors of consequence on the Atlantic, but Chesapeake Bay—navigable its entire length—has several excellent ones. The state is well watered. The Potomac is the principal river, flows 450 m., and is navigable 200 m. The Wicomico, Patuxent, South, Severn, Patapsco, Bush, and Susquehanna on the West Shore; the Pocomoke, Manokin, Nanticoke, Choptank, St. Michael's, Wye, Chester, Elk, and Sassafras on the East Shore; and Fishing, Honga, and Hudson. Beside Chesapeake Bay, which has Pocomoke and Tangier Sounds and Eastern Bay, there are Chincoteague, Sinepuxent, and St. Martin's bays. The chief islands are Kent, Bloodworth's, Holland's, Smith's, Tangier, Halfmoon, and Assateague.

Climate.—The climate is temperate, and, excepting in the lowlands on Chesapeake Bay, salubrious. The mean annual temperature of the central portion of the state is 56° , n. portion 54° , w. highlands 50° F. There are no extremes of heat and cold. Temperature at Baltimore 33° — 41° winter average, 73° — 79° summer average; average rainfall 41 inches; greatest annual rainfall (w. shore of Chesapeake Bay) 50 inches.

Geology.—The formations from the alluvial deposits in the Chesapeake Bay region are: Pleistocene in St. Mary's co.; clays, sands, and calcareous marls of the Miocene on the East Shore; Tertiary ferruginous sands and clays on the West Shore, with deposits of argillaceous carbonate of iron from Washington to the head of the bay; cretaceous in the n.e. portion; metamorphic rocks, talcose, mica slate, and limestone running n.e. and s.w. back of

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Baltimore; middle secondary red sandstone passing through Carroll and Frederick cos.; Silurian rocks and Potsdam sandstone on the w. line of Frederick co.; and calcareous strata in the e. portion of Washington co. In mineralogy, marls, magnesia, honestone, and traces of gold, nickel, and cobalt have been found. The n.w. cos. contain inexhaustible veins of bituminous and semi-bituminous coal; the 'Bare Hills' in the metamorphic rocks back of Baltimore have valuable beds of chrome iron: the same group of rocks also yields silicates and hydrates of magnesia, copper, and excellent limestones and marble; at Sykesville specular iron ore abounds. The middle secondary red sandstone region contains the beautiful brecciated marble from which the pillars in the old house of representatives in the national capitol were made. Frederick co. has several copper mines; and the e. region contains much bog-iron ore. The soil in the e. is particularly adapted to the cultivation of the peach and market-garden products; in the central valleys and n. cos. to tobacco, wheat, and Indian corn. The lowland regions contain gum, cypress, cedar, juniper, dogwood, magnolia, holly, elm, cherry, beech, sycamore, sassafras, and persimmon; the mountainous, oak, maple, walnut, ash, birch, hickory, chestnut, pine, and spruce.

Zoology.—M. contains few wild animals, and these are limited to bears, deer, foxes, raccoons, and opossums; but small game is still abundant; wild-ducks, brant, teal, pigeons, partridges, quail, and snipe abound in the bays, estuaries, and on the East Shore. The beautiful Baltimore oriole, the rice-bird, known in the north as the bobolink, and varieties of the finch and tanager, are the best known birds. Fish are varied, abundant, and choice in quality; and M. oysters are appreciated the world over.

Agriculture.—In 1890 the total number of farms was 40,789; total value, including buildings and implements, \$200,792,960—a gain of \$13,635,694 in ten years; average size of farms, 121 acres. There were used in production of the cereals 1,239,428 acres, on which 25,764,098 bushels were raised, 47.34 per cent. of the acreage being given to corn and 41.21 to wheat; 586,817 acres in corn producing 14,928,142 bushels, 510,727 in wheat 8,348,177 bushels, 99,195 in oats 2,019,658 bushels, 818 in barley 18,778 bushels, 34,302 in rye 352,596 bushels, 7,569 in buckwheat 96,747 bushels, etc. In 1900 the farms numbered 46,012, comprised 5,170,075 acres, and were valued, with improvements, impl'ts, mach. and stock, at \$204,645,407.

Manufactures.—In 1890 M. had 7,485 manufacturing establishments, employing 107,054 hands, paying wages \$41,526,832, using capital \$119,667,316, using materials valued at \$92,059,390, yielding products valued at \$171,842,593. The leading industry was making of men's clothing, in which there were engaged 125 establishments, employing 13,094 hands, paying \$1,178,971 wages, using \$9,782,643 capital, materials valued at \$8,123,073, yielding products valued at \$15,032,924. The manufacture of

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cotton goods came next, 15 establishments, employing 4,313 hands, using \$7,296,793 capital, paying \$1,134,445 wages, materials valued at \$3,378,016, products valued at \$5,457,792. Fertilizers came next, there being 53 establishments, using \$6,935,914 capital, employing 1,232 hands, paying \$711,548 wages, materials valued at \$3,984,178, yielding products valued at \$6,208,025. Other leading industries were, in the order named: masonry, brick, and stone; flour and grist; car and railroad construction; fruit and vegetables, canned, the latter yielding a product of \$7,169,109. In 1900 there were 9,879 manufactories, with \$163,147,260 capital, and products valued at \$242,552,990.

Fisheries.—In the value of products of all classes of fisheries, M. stood second among the states in 1890, the total being \$5,564,024. In the shad and alewife fishery the value of the catch was \$755,013; in the menhaden fishery, \$44,360. There were 30,609 persons engaged in the oyster fishery, the capital invested being \$4,518,758, and the product 10,282,752 bushels, valued at \$4,467,325, the number of vessels employed being 1,380, and the number of boats 6,759.

Finance.—In 1895 the assessed valuation of the property of the state was \$534,930,476, and the tax-rate was 17 $\frac{3}{4}$ cents on each \$100. There was available in the treasury \$3,159,318; disbursements, \$2,454,759. Disbursements for the public schools amounted to \$699,717. Expenses of prisons and charitable institutions, more than \$600,000. Total funded debt \$8,684,986. Productive assets and investments to credit of sinking-fund, \$5,679,733, leaving a balance of \$3,005,253 as the net debt of the state. There were in 1902, 82 national banks, capital \$16,834,960; 31 state banks, cap. \$1,739,185; 21 savings and 5 private banks, and 6 loan and trust companies.

Education, etc.—In 1894-5 there were 204,744 children of school age enrolled in the public schools, of whom 121,562 were in average daily attendance. The number of schools in the counties was 2,154; in Baltimore, 179; total school receipts from all sources, \$2,349,341; total expenses, \$2,388,281. The chief denominational institutions of learning are: Loyola Coll. at Baltimore, Rock Hill Coll. and St. Charles Coll. at Ellicott City, and Mount St. Mary's Coll. at Mount St. Mary's, all Rom. Cath.; Morgan Coll. at Baltimore (Meth. Episc.). New Windsor Coll. at New Windsor (Presb.), and Western Maryland Coll. at Westminster (Meth. Prot.), Johns Hopkins Univ. at Baltimore, Washington Coll. at Chestertown, and St. John's Coll. at Annapolis are non-sectarian. Among the charitable and correctional institutions are: Baltimore Orphan Asylum, Asylum for the Feeble-minded, Deaf and Dumb Asylum; Baltimore City Hospital, Home of the Friendless, House of Correction, House of Refuge, Hospital for the Insane, Penitentiary, and St. Mary's Industrial School. The illiterate population 10 years of age and over was 798,605.

Religion.—In 1890 M. had 2,369 churches, the Meth. Episc. and Meth. Prot. denominations leading in membership.

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Transportation.—The chief railroad in M. is the Baltimore and Ohio trunk-line, chartered 1827; first ground broken for its construction 1828, July 4. Other transportation was afforded many years by the Chesapeake and Ohio canal, extending from Cumberland to Georgetown, D. C., 184 m., opened 1850, Oct. 10; but its usefulness was seriously impaired by floods 1877, and practically destroyed by those of 1889, June 1-2. The question of the future use of the canal was long pending before the legislature and the courts, propositions to repair and maintain it as a highway, to lease it, and to sell it, being urged with equal force. The W. Va. Central railroad desired to buy it, to use its bed for a roadway to Washington, and the Baltimore and Ohio railroad wanted to control it—whether maintained as a canal or not—to prevent or postpone the building of a competing line.

History.—Capt. William Claiborne with a party from Va., made the first white settlement in M., locating on Kent Island in Chesapeake Bay 1631. The first permanent settlement was made at St. Mary's, by Leonard Calvert, as gov., and 200 emigrants 1634, under a charter granted to Cecil Calvert, second Lord Baltimore, 1632, covering a large tract of land that had been partially explored by George, first Lord Baltimore. After this settlement the Claiborne colonists, refusing to recognize the Calvert charter, were expelled. The Calvert colony was founded on the proclaimed basis of religious toleration, though its promoters and early members were Rom. Cath. in faith, and was largely sought by victims of religious persecution elsewhere. The first assembly organized under the charter met 1635; a dispute as to whether the assembly or the lord proprietor had the right to take the initiative in public legislation was settled by Lord Baltimore conceding the right to the assembly 1638; and the first serious trouble occurred 1642-47, when the authority of the proprietor was resisted by a party of Va. Puritans who had settled in M., and by the Claiborne party, who had regained Kent's Island. In 1645 these parties joined forces and compelled Gov. Calvert to flee into Va.; but 1647 he returned at the head of a milit. force and recovered possession. In 1649 the assembly passed an act allowing Christians of all sects to worship God according to the dictates of their own consciences, and in the following year the Puritans began a movement designed to wrest the colony from its proprietor, though Gov. Calvert industriously sought to reconcile them, granted them large tracts of land, and organized their chief settlements into separate cos., Anne Arundel and Charles, the Puritans, continued turbulent, and by the time of the establishment of the Commonwealth in England, had a majority of the population in the colony. The Puritans then insisted on an immediate transfer of the colonial govt. to them, to which the Calverts objected; and, pending the dispute, commissioners from England visited M. 1652, associated with them in council Capt. Claiborne and Bennett, the leader of the

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Puritans, and established the authority of the Commonwealth. Lord Baltimore's attempt 1654 to recover possession of the province, led to a civil war in which the entire proprietary force was killed or captured 1655, Mar. 25. In 1658, on the Restoration, Lord Baltimore recovered his proprietary rights, and the colony began to thrive. In 1688, King William assumed the govt. of the province, and the cap. was removed from St. Mary's to Providence, thereafter known as Annapolis. In 1715, Charles, the first Prot. Calvert, succeeded to the proprietary rights, and for the first time in 24 years the authority of the proprietary was recognized through the province, though John Hart, the last royal gov., was continued in office till 1720.

From this time the progress of M. was rapid. Baltimore was laid out 1730; the *Maryland Gazette* was established and Frederic laid out 1745; 8 furnaces and 9 forges were in operation 1749; the Mason and Dixon boundary line (q.v.) between Penn. and M. was run 1750; and Georgetown was laid out 1751. During 1754-58 the w. portion of M. was imperilled by the Indians. The people bore an active part in the two French wars; opposed the stamp act and tea duty act; and 1774, Dec., took the control of public affairs into their own hands in a popular convention, and thus closed the history of the proprietary govt. A bill of rights and a constitution were adopted 1776, Nov.; the first legislature assembled at Annapolis 1777, Feb. 5; and Thomas Johnson was elected the first republican gov. Feb. 13, following. The 'Maryland Line' was an efficient body of soldiers in the revolutionary army. The federal congress met at Annapolis 1783: Washington resigned his commission to it Dec. 23. and the federal constitution was adopted 1788, Apr. 28. During the second war with England, several M. towns were plundered and burned by the British under Admiral Cockburn; the M. militia vainly attempted to check the march of the British to Washington: and 1814, Sep., the Americans defeated the British at North Point and successfully defended Fort McHenry, the chief defense of Baltimore, against the bombardment of the British fleet. The Baltimore and Ohio railroad and the Chesapeake and Ohio canal were begun 1828, and the state constitution was amended and revised 1802, 10, 36, 45-6, 51, 64 and 67. The first blood of the civil war was shed in Baltimore 1861, Apr. 19. The state was several times traversed by Confederate armies, and important engagements were fought at Antietam, South Mountain, and Monocacy. The state was kept in the Union, notwithstanding it had many sympathizers with the Confederacy, and it contributed 49,730 men to the federal armies.

Government.—The executive authority is vested by the constitution in a gov., elected for 4 years, salary \$4,500 per annum; the legislative in a general assembly, comprising a senate of 26 members elected for 4 years, and a house of representatives of 95 members elected for 2 years, salary of each \$5 per day and mileage; and

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the judicial in a court of appeals, circuit, orphan's superior, common pleas, city, and criminal courts, and justices of the peace. The court of appeals consists of 8 judges, one from each judicial district, elected by the people; the gov. appoints one of the number to be chief justice. Each district also has a circuit court consisting of a chief and two assoc. judges; the judge of the court of appeals in the district is *ex-officio* chief judge of the circuit court there, excepting in Baltimore; judges are elected for 15 years. The city of Baltimore constitutes a judicial district, and has 5 courts with judges elected for 15 years, viz., superior, circuit, common pleas, city, and criminal. Each co. and the city of Baltimore has an orphan's court of 3 judges elected for 4 years. All justices of the peace are appointed by the gov. The chief justice and 7 assoc. judges receive a salary of \$3,500 per annum, and district judges \$4,000. The sec. of state receives a salary of \$2,000; treas. \$2,500; comptroller \$2,500; atty.gen. \$3,000; 2 collectors of internal revenue \$2,625 and \$4,500; collector of customs \$7,000, 2 collectors \$250 and \$1,200 with fees; auditor \$2,500; naval officer \$5,000; and surveyor \$4,500. There were (1901, Jan. 1) 1,150 post-offices, of which 1 was first class, 6 second, 24 third, 119 fourth, 31 presidential, and 475 money-order.

The successive govts. with their terms of service are as follows: *Lords Proprietary*: Cecil Calvert (2d Lord Baltimore) 1632-75; Charles Calvert (3d Lord B.) 1675-1715; Benedict L. Calvert (4th Lord B.) 1715; Charles Calvert (5th Lord B.) 1715-51; Frederick Calvert (6th Lord B.) 1751-71; Sir H. Harford (last proprietor) 1771-73; *Govs. of Lords Proprietary*: Leonard Calvert 1633-47; Thomas Green 1647-49; William Stone 1649-54; Parliamentary Commissioners 1654-58; Josiah Fendall 1658-61; Philip Calvert 1661-2; Charles Calvert 1662-67; Charles Calvert (3d Lord B.) 1667-78; Thomas Notley 1678-81; Charles Calvert (3d Lord B.) 1681-85; William Josephs 1685-89; Convention Commissioners 1689-92; *Royal Govs.*: Sir Lionel Copley 1692-3; Sir Edward Andros 1693-4; Francis Nicholson 1694-99; Nathaniel Blackistone 1699-1703; Thomas Tench 1703-4; John Seymour 1704-9; Edward Lloyd 1709-14; John Hart 1714-15; *Prop. Govt.*: John Hart 1715-20; Charles Calvert 1720-27; Benedict L. Calvert 1727-32; Samuel Ogle 1732-3; Charles Calvert (5th Lord B.) 1733-35; Samuel Ogle 1735-42; Thomas Bladen 1742-47; Samuel Ogle 1747-52; Benjamin Tasker 1752-3; Horatio Sharpe 1753-69; Robert Eden 1769-74; Council of Safety 1774-76; *State Govs.*: Thomas Johnson 1777-79; Thomas Sim Lee 1779-82; William Paca 1782-85; William Smallwood 1785-88; John E. Howard 1788-91; George Plater 1791-2; Thomas Sim Lee 1792-94; John H. Stone 1794-97; John Henry 1797-8; Benjamin Ogle 1798-1801; John F. Mercer 1801-3; Robert Bowie 1803-6; Robert Wright 1806-9; Edward Lloyd 1809-11; Robert Bowie 1811-12; Levin Winder 1812-15; C. Ridgely 1815-18; Charles Goldsborough 1818-19; Samuel Sprigg 1819-

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22; Samuel Stevens, Jr., 1822-25; Joseph Kent 1825-28; Daniel Martin 1828-9; Thomas K. Carroll 1829-30; Daniel Martin 1830-1; George Howard (acting) 1831-2; George Howard 1832-3; James Thomas 1833-35; Thomas W. Veazey 1835-38; William Grayson 1838-41; Francis Thomas 1841-44; Thomas G. Pratt 1844-47; Philip F. Thomas 1847-50; Enoch L. Lowe 1850-53; Thomas W. Ligon 1853-57; Thomas H. Hicks 1857-61; Augustus W. Bradford 1861-65; Thomas Swann 1865-69; Oden Bowie 1869-72; William Pinckney White 1872-75; James B. Groome 1875-6; John Lee Carroll 1876-80; William T. Hamilton 1880-84; Robert M. McLane 1884-5; Henry Lloyd 1885-88; Elihu E. Jackson 1888-92; Frank Brown 1892-96; Lloyd Lowndes, 1896-1900; J. W. Smith, 1900-.

Counties, Cities, and Towns.—M. is divided into 24 cos. In 1880 the most populous *counties* were: Baltimore city (co-extensive with co.) 332,313; Baltimore 83,336; Frederick 50,482; and Washington 38,561; *cities and towns*: Baltimore 332,313; Cumberland 10,693; 1890, *counties*: Baltimore city 434,439; Baltimore 72,909; Frederick 49,512; Alleghany 41,571; Washington 39,782; Anne Arundel 34,094; *cities and towns*: Baltimore 434,439; Cumberland 12,729; Hagerstown 10,118; Frederick 8,193.

Politics.—State, congressional, and presidential elections, Tuesday after first Monday in Nov.; legislature meets biennially in even-numbered years on first Wednesday in Jan.; limit of session 90 days; insane, convicts and bribers excluded from voting. The legislature 1903 had dem. majority of 15 joint ballot. M. has 8 electoral votes. Her votes for pres. and vice-pres. have been as follows: 1789, George Washington and Robert H. Harrison 6; 1792, George Washington and John Adams 8; 1796 John Adams 7, Thomas Jefferson 4, for pres., Thomas Pinckney 4, Aaron Burr 3, John Henry 2, vacancies 2, for vice-pres.; 1800, Thomas Jefferson and Aaron Burr 5 each for pres.; John Adams and Charles C. Pinckney 5 each for vice-pres.; 1804, Thomas Jefferson 9, Charles C. Pinckney 2, for pres., George Clinton 9 and Rufus King 2 for vice-pres.; 1812, James Madison 6 and George Clinton 5 for pres., Elbridge Gerry 6 and Jared Ingersoll 5 for vice-pres.; 1816, James Monroe 8 and 3 vacancies for pres., Daniel D. Tompkins 8 and 3 vacancies for vice-pres.; 1820 James Monroe 11 for pres., Daniel D. Tompkins 10 and Robert C. Harper 1 for vice-pres.; 1824, Andrew Jackson 7, John Quincy Adams 3, and William H. Crawford 1 for pres., John C. Calhoun 10 and Andrew Jackson 1 for vice-pres.; 1828, Andrew Jackson 5 and John Quincy Adams 6 for pres., John C. Calhoun 5 and Richard Rush 6 for vice-pres., 1832, Andrew Jackson 3, Henry Clay 5, and 2 vacancies for pres.; John Sargeant 5, Martin Van Buren 3, and 2 vacancies for vice-pres., 1836, William Henry Harrison and Richard M. Johnson 10; 1840, William Henry Harrison and John Tyler; 1844, Henry Clay and Theodore Frelinghuysen 8; 1848, Zachary Taylor and Millard Fillmore; 1852, Franklin Pierce and William R. King; 1856, Millard

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Fillmore and Andrew J. Donelson; 1860, John C. Breckinridge and Joseph Lane; 1864, Abraham Lincoln and Andrew Johnson 7; 1868, Horatio Seymour and Francis P. Blair; 1872, Thomas A. Hendricks and B. Gratz Brown 8; 1876, Samuel J. Tilden and Thomas A. Hendricks; 1880, Winfield S. Hancock and William H. English; 1884, Grover Cleveland and Thomas A. Hendricks; 1888, Grover Cleveland and Allen G. Thurman; 1892, Grover Cleveland and Adlai E. Stevenson; 1896, William McKinley and Garret A. Hobart; 1900, William McKinley and Theodore Roosevelt.

Population.—(1790) white 208,649, free colored 8,043, slaves 103,036, total 319,728; (1800) white 246,326, free colored 19,587, slaves 105,635, total 341,548; (1810) white 235,117, free colored 33,927, slaves 111,502, total 380,546; (1820) white 260,223, free colored 39,730, slaves 107,397, total 407,350; (1830) white 291,108, free colored 52,938, slaves 102,994, total 447,040; (1840) white 318,204, free colored 62,078, slaves 89,737, total 470,019; (1850) white 417,943, free colored 74,723, slaves 90,368, total 583,034; (1860) white 515,918, free colored 83,942, slaves 87,189, total 687,049; (1870) white 605,497, free colored 175,391, total 780,894; (1880) white 724,693, free colored 210,250, total 934,943; (1890) 1,042,390; (1900) 1,188,044.

MARY MAGDALENE—MASANIELLO.

MARY MAGDALE'NE: see MAGDALENE, MARY.

MARYPORT, *mā'ri-pōrt*: seaport of Cumberland, England, at the mouth of the Ellen, 28 m. s.w. of Carlisle by railway. Its origin dates from 1750. Shipbuilding and kindred employments are carried on extensively, and there are in operation iron-foundries, saw-mills, flour-mills, tanneries, breweries, etc. A very large quantity of coal and coke is shipped, especially to Ireland. M. has abundant railway connection, and possesses a floating dock and two patent slips. It is a place of resort for sea-bathing. In 1880, 1,884 vessels, measuring 243,700 tons, entered the port, and 1,907, measuring 247,255 tons, cleared. Pop. (1871) 7,443; (1881) 8,177; (1891) 8,784.

MARYSVILLE, *mā'riz-vīl*: city in n. Cal., on the n. bank of the Yuba river, at confluence of Feather river, 116 m. from San Francisco, 100 m. n.n.e. of Benica, 50 m. n. of Sacramento; on the Central Pacific r.r.: also having steamboat communication with San Francisco. It is at the head of navigation, in a fertile district, among rich mines. It has extensive trade and manufacture. It is well laid out, built mostly of brick; has water-works, gas-works, and a public library. Pop. (1880) 4,321; (1890) 3,991; (1900) 3,497.

MASACCIO, *mâ-zâl'chō* (real name TOMMASO GUIDI): early Italian painter of notable originality, in Rome and at Florence: 1402-29. His name was changed to Tommasaccio ('Lubberly Tom')—shortened to M.—because of the slovenly manners and habits which marked him, though good-natured and without vices. A pupil of Masolino ('Tommy') of Panicale, he executed at Rome, at the age of 19, or earlier, a still extant series of frescoes—a crucifixion, and scenes from the story of St. Catharine and of St. Clement, in a chapel of the church of St. Clement—which were for naturalness of portrayal in advance of the art of the time; especially the group of the Marys in the crucifixion scene, and St. Catharine in the presence of Maxentius, converting eight learned doctors by her arguments. But it was at Florence, in the Brancacci chapel of the church of the Carmine, that M. executed, 1423-28, paintings, seven or eight in number, mostly scenes from the life of the apostle Peter, which were unexampled at the time as lessons in art.

MASANIELLO, *mâ-zâ-ne-ě'llo* (properly TOMMASO ANIELLO): fisherman of Amalfi, leader of the revolt in Naples 1647, July, against the Spanish viceroy, the Duke of Arcos; d. 1647, July 16. The people had been exasperated by oppression, and great excitement had been produced by a new tax on fruit. M. himself was indignant at the rude treatment which his wife had received when she was detected in the attempt to smuggle a little flour. He entered into a conspiracy with some others who cherished feelings similar to his own; and an opportunity being afforded them by a tumult at the Customs' Houses 1647, July 7, when the new tax on fruit was to be

levied, they stirred up the multitude to a revolt. Their triumph was complete; palaces and public buildings were destroyed, a bloody popular justice was executed, M. gained absolute control of the city; and the viceroy, terrified into the greatest concessions, entered into a regular treaty with M. in the church of the Carmelites July 13. But success and the flatteries of the viceroy turned the fisherman's head; he gave himself up to drunkenness and every excess, and his capricious despotism immediately became terrible to his own associates, who assassinated him July 16. See Angelo Saavedra, Duke of Rivas, *Insurrecion de Napoli en 1647* (2 vols., Madr. 1849).

MASAYA, *mâ-sî'â* or *mâ-sâ'ya*: town of Nicaragua, Central America, eight m. n. of the lake of Nicaragua, near the volcano of Masaya. Pop. 16,000, chiefly Indians.

MASCARA, *mâs-kâ-râ'*: very old town of Algeria, province of Oran, on a slope of the Atlas Mountains. Pop. about 6,000.

MASCARENE, *măs-ka-rĕn'*, JEAN PAUL: English soldier: 1684-1760, Jan. 22; b. Castras, Languedoc, France, of Huguenot family. At the age of 16 he was an exile at Geneva; and, having been educated there, he went to England, became naturalized 1706, and entered the British army as a lieutenant. Going with his regiment to Nova Scotia 1711, he became its colonel; then lieut. gov. and commander-in-chief; was appointed councilor 1720. In 1725 M. joined the gov. of Mass. and N. H. in making treaty with the Indians. He was gov. of Nova Scotia 1740-49, and 1754 repelled a French force under Du Vivier. M. was commissioned maj. gen. 1758. He died in Boston.

MASCARENE ISLES, *măs-ka-rĕn'*, or MASCARENHAS, *măs-kâ-râ'nyâs*: island group in the Indian Ocean e. of Madagascar, comprising Ile de Bourbon (q.v.), now called Réunion, and Mauritius (q.v.), or Ile de France; also Rodriguez, 360 m. further east. The name M. is from the Portuguese navigator, Mascarenhas, who discovered Bourbon 1505.

MASCLE, n. *măs'kl* [OF. *mascle*; F. *macle*, stone shaped like a quadrangular prism—from L. *macŭla*, a spot, the mesh of a net]: in *heraldry*, a lozenge-shaped figure, perforated and showing a narrow border. MASCLED, a. *măs'kld*, composed of or covered with small lozenge-shaped plates or divisions. MAS'CALLY, term applied to a field divided by diagonal lines into lozenge-shaped compartments of alternate tinctures, each having its centre voided of the opposite tincture. LOZENGY-MASCALLY denotes a field composed of lozenges and mascles alternately. In earlier heraldry, mascally was used for lozengy.



Mascle.

MASCOT, *măs'côt* [Fr. *mascotte* from Pg. *mascotto*, witchcraft], something regarded as bringing good luck to its possessor—any animal or person whose presence is fancied to afford good luck.

MASCOUTINS—MASHAM.

MASCOUTINS, *mās-kô-tēnz'*: Indian (Algonquin) tribe of the Northwest, connected with the Fox and Kickapoo tribes, and for a hundred years and more, 1669-1777, ranging from the Wisconsin to the Ohio. The M. were known to the French, first about 1620, as at war with the Ottawas, and as far e. as Niagara. They were found by Allouez 1669 on the Wisconsin, later on the Fox river, and some still later on the Ohio. They aided the Foxes and Kickapoos against the French 1712, and remained hostile till the close of the French occupation (1765). They fought the English advance equally, attacking Col. Croghan near the Wabash 1765, and 1777 attempting by treachery to destroy Clarke. The Hurons gave them a name said to mean Fire Nation, but thought by some early writers to signify Prairie.

MASCULINE, a. *mās'kū-līn* [F. *masculin*—from L. *masculinus*, masculine—from *mas*, a male]: male; having the qualities of a man; resembling man; in *gram.*, denoting the gender appropriated to the male kind; strong; robust; coarse, as opposed to delicate. **MAS'CU LINELY**, ad. *-līn-lī*.

MAS-ENA: town of Negroland, Africa, cap. of the country of Bagirmi, lat. 11° 35' n., long. 16° e.; about 100 m. s.e. of Lake Tchad. It is 7 m. in circumference, and was formerly much larger, having been reduced by disastrous civil and foreign wars. Only about half the area is inhabited. The palace of the sultan, who is reported to have 300 to 400 wives, consists of irregular clusters of clay buildings, and huts surrounded by a wall of baked bricks. The town is walled, and has nine gates. Barth's *Travels in Central Africa*.

MASH, n. *māsh* [Sp. *masticar* and *mascar*; OF. *mascher*, to chew: Bav. *maischen*; Ger. *meischen*, to stir the malt in hot water: Sw. *maska*, to mash for beer: Scot. *mask*, to infuse, as tea; L. *masticārē*, to chew]: a mixture of ingredients beaten or blended together; the mixture of malt and hot water in brewing, or of water and bran as for a horse: V. to crush or bruise into a mass; to steep crushed malt in hot water. **MASH'ING**, imp. **MASHED**, pp. *māsh't*: ADJ. mixed into a mass; bruised; crushed. **MASHY**, a. *māsh'ī*, produced by crushing or bruising. **MASH-TUB**, or **MASHING-TUB**, a large deep tub for containing the mash in the brew-house.

MASHAM, *māsh'am*, **ABIGAIL**, Lady (originally Abigail Hill): 1670-1734, Dec. 6; b. London; daughter of Francis Hill, merchant. She was a poor cousin of Sarah, Duchess of Marlborough. Lady M.'s father married a Miss Jennings, whose niece, Sarah Jennings, became Lady Churchill and Duchess of Marlborough (see **MARLBOROUGH**, **JOHN CHURCHILL**). Her cousin Sarah's influence got her a place as a lady of the bedchamber to Anne, then princess of Denmark and heir to William and Mary. When Anne became queen 1702, M. took advantage of her cousin Sarah's offensive imperiousness with

MASHENA—MASK.

Anne to undermine her influence. In 1707 she was married to Samuel Masham, of the suite of Queen Anne's husband, Prince George of Denmark, in the queen's presence, and without the knowledge of the Marlboroughs. The latter were set aside after a bitter struggle between whigs and Tories. At the close of 1711 M.'s husband was made Baron Masham, one of a bunch of 12 peers made to enable the Tories to control the House of Lords. Bolingbroke and Lady M. lent themselves to the extreme Jacobite interest, the scheme to secure the succession to the queen's exiled brother, instead of to George of Hanover; but Anne died before their plans were ripe, and with the accession of George I. (1714) Lady M. disappeared from court life.

MASHENA; *măsh-ě'na*: town of Bornu, central Africa, about 240 m. w. of Lake Chad. Pop. 10,000.

MASINISSA, or **MASSINISSA**, *măs-ĩ-nĩs'sa*: B.C. 238–148 (reigned B.C. 208–148); b. near the Carthaginian territory (now Tunis): East Numidian prince. He became, from a vassal neighbor to Carthage, an ally of the Romans (B.C. 206–149), made the conquest of W. Numidia (now Algiers), aided Rome in the downfall of Hannibal (B.C. 202), and finally helped (B.C. 149) to bring on the third Punic war and the destruction of Carthage. He was educated at Carthage in Latin and Greek, had good natural abilities, and was raised by Punic culture out of the barbarism of his race. M. began his reign by subjugating W. Numidia, Syphax, its prince, flying to the Moors in the extreme w. of Africa. He sided with Carthage against the Romans under the two Scipios in Spain, but on the defeat of Punic arms he went over to the Romans. Returning home he found himself at war with Syphax, who not only recovered W. Numidia, but nearly drove out M., until the Roman general came to his aid, and he was able finally to crush Syphax, and make his cap. Cirta, the seat of his own power, and a notable centre of Phœnician civilization. At the battle of Zama (B.C. 202), where Hannibal was finally overthrown, M., commanding the cavalry on the right wing of Scipio's army, contributed greatly to the Roman victory; and thenceforward, recognized by Rome as master of all Numidia, he never ceased to harass Carthage, through more than 50 years, until the third Punic war was provoked B.C. 149, and Carthage was finally and forever overthrown. M. died, leaving a strong kingdom, with a fleet, a full treasury, and much advance in culture, and a memory of great ability and courage, mixed with barbarian cunning—one of the notable figures of ancient history.

MASK, n. *mâsk* [F. *masque*: Ger. *maske*, a mask, a veil: Piedm. *masche*, ghosts: It. *maschera*; Sp. *mascara*, a mask: see note under **MASQUE**]: a cover or disguise for the face; anything which disguises; a pretense; a piece of mummery; a revel; a masquerade; an irregular dramatic performance (see **MASQUE**): in *arch.*, carved decoration in

MASK—MASKELYNE.

the semblance of a face, on a keystone or other prominent stone: V. to cover the face with a mask or visor; to hide or conceal. MASKING, imp.: ADJ. playing in a mask; pertaining to a mask or revel. MASKED, pp. *mâskt*: ADJ. concealed; disguised. MASK'ER, n. -*ér*, one who wears a mask. MASKED BALL (see MASQUERADE). THE MAN WITH THE IRON MASK (see IRON MASK).—SYN. of 'mask, v.': to cloak; blind; veil; conceal; disguise.

MASK, v. *mâsk* [Gael. *masg*, to steep, to infuse: Sw. *maska*, to mash for beer]: in *Scot.*, to infuse, as 'to mask tea.' MASK'ING, n. in a state of infusion, as tea in a teapot with boiling water: see MASH.

MASK: disguise or covering of the face, the use of which originated perhaps in the harvest festivities of the Grecian peasantry of the most ancient times, and appears subsequently to have been associated with the representation of Satyrs, Silenus, and Bacchus in the orgies of Bacchus. Greek tragedy having originated in close connection with the worship of Bacchus, masks were employed in it from the first; but it is uncertain when they were introduced in comedy. The masks used by actors were of very various form and character. They were often provided with metallic mouthpieces, for increasing the power of the voice, this being rendered requisite by the immense size of the ancient theatres; their whole use being indeed adapted to such vast buildings, and to a style of dramatic representation in which the ideal prevailed, and the reality of individual impersonation was far less considered than in modern times. See Ficoroni, *De Larvis Scenicis* (1754); Sand, *Masques et Bouffons* (1860); Altmann, *Die Masken* (1875); and works on the drama (q.v.)

The use of masks in the modern theatre originated in the Italian *commedia dell' arte*, which may itself be traced back to the ancient Roman mimes and pantomines (q.v.), and has always been confined to that class of entertainments in which the very names of the characters, *Pantaloön*, *Harlequin* (q.v.), etc., have been borrowed from Italy.

MAS'KALLONGE: see MUSKELUNGE.

MASKELYNE, *măské-lîn*, NEVIL: English astronomer: 1732, Oct. 6—1811, Feb. 9; b. London. He was educated at Westminster School, and at Catherine Hall; and studied divinity at Trinity College, Cambridge, where he obtained a fellowship 1756. In 1758 he was elected a fellow of the Royal Soc., and applied himself to astronomy. In 1763 he made a voyage to Barbadoes, to test the newly-invented Harrison chronometers; and 1765 was appointed astronomer-royal at Greenwich. During the 46 years that he held this situation, he acquired repute for diligence and accuracy of investigation. He was the first to mark the time to tenths of a second. 1774–76, he made his famous expedition to Schellallon, for the purpose of determining the density of the earth: see EARTH. M. was the means of originating the *Nau-*

tical Almanac (q.v.), and also obtained leave to have his observations printed at the expense of government—a great help to scientific investigators. He published very few works outside of his official capacity, but of the others, no fewer than 35 appeared, many of which have been found of immense service (especially his *Astronomical Observations*) to subsequent astronomers.

MASKINONGE: see MUSKELLUNGE.

MASK—MASKED: in *military affairs*, terms used in different senses. A *masked battery* is one so constructed, with grassy glacis, etc., as to be hidden from the view of the enemy, until, to his surprise, it suddenly opens fire upon him—on his flank, perhaps: see BATTERY. The fire of a battery is *masked* when some other work, or a body of friendly troops, intervenes in the line of fire, and precludes the use of the guns. A fortress or an army is *masked* when a superior force of the enemy holds it in check, while some hostile evolution is being carried out.

MASLIN, n. *mās'lin* [OF. *mestillon* or *mesteil*; F. *méteil*, *maslin*—from mid. L. *mixtellum*—from L. *mixtum*, mixed, mingled: It. *mescolare*, to mix]: a mixed corn crop, as wheat and rye; brass, as composed of copper and zinc—also spelt *meslin* and *mastlin*: ADJ. composed of different sorts, as *maslin* bread.

MASON, n. *mā'sn* [F. *maçon*, a mason—from mid L. *maciōnem*, a mason—from OHG. *meizo*, a mason—from OHG. *meizan*; Goth. *maitan*, to cut]: a builder in stone; one who dresses or cuts stones with a chisel for building; a freemason (which see under FREE: see also MASONS, FREE, below). MASONED, in *her.*, showing the lines formed by the junction of the stones in a wall. MASONIC, a. *mā-sōn'ik*, of or relating to freemasonry. MASONRY, n. *mā'sn-rī*, the trade or craft of a mason; the art of building in stone or brick; also the construction itself (see MASONRY, below): the craft or mysteries of freemasons: see under FREE: see also MASONS, FREE (below).

MASON, *mā'sn*, CHARLES: 1730–1787, Feb.; b. England: English astronomical observer and surveyor, who, with Jeremiah Dixon, surveyed the famous Mason and Dixon's Line (q.v.) separating Penn. and Md. (and further the North and South). As assistant at Greenwich observatory, he had been with Dixon 1761 to observe the transit of Venus at the Cape of Good Hope. In 1763 the two were commissioned by the proprietors of Penn. and those of Md. to survey the boundary between the two colonies. They reached Phila. 1763, Nov., and began the work, which they completed 1767, Dec. The line thus run became famous as marking, except for parts of Del. and Va., the limit between free and slave soil. M. was a skilled observer; and his records and papers were discovered at Halifax, N. S., 1860, in a cellar of the govt. house where they had been thrown. M. and Dixon returned to England 1768, Sep. 9; but M. finally returned to America, and died in Philadelphia.

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MA'N, ERSKINE, D.D.: Presbyterian clergyman: 1805, Apr. 16—1851, May 14; b. New York; son of the Rev. Dr. John Mitchell M. He graduated at Dickinson College 1823 (of which his father was pres.); became pastor of the Presb. Church at Schenectady 1827, and of Bleecker St. Presb. Church, New York, 1830; and was prof. of church history in Union Theol. Seminary 1836—42. A collection of his sermons, made by Rev. Dr. Wm. Adams, was published as *A Pastor's Legacy* (New York, 1853). Dr. M. was a doctrinal preacher of much force and eloquence.

MA'N, FRANCIS, D.D.: 1799, Apr. 2—1874, Mar. 3; b. York, England: Baptist missionary: also a linguist and naturalist. Bred to his father's trade of shoemaker, he came to America 1818, and after joining a Bapt. church at Canton, Mass., 1825, studied for the Bapt. ministry at Newton, Mass., 1827—29, and 1830 was sent as missionary of the Amer. Miss. Union to Burmah, where his achievements in gathering very great numbers of Karens into Christian churches, in acquiring languages and producing translations of the Bible and other books, and in educating natives as teachers and preachers, were most remarkable. He could speak in most of the dialects of Farther India, and was a scholar in German, Arabic, Chaldee, Hebrew, Syriac, Chinese, Siamese, Sanskrit, Pali, etc. After 22 years at Tavoy, and having published three successive versions of the N. Test. in Karen, he removed 1853 to Toungoo and brought out a complete Karen version of the Bible. In 1854 he made a visit to England and America, returning to his work 1856. In 1852 he published *Tenasserim; or the Fauna, Flora, Minerals, and Nations of British Burmah and Pegu*; enlarged 1860 as *Burmah; its People and Natural Productions*. The Eng. govt. bought a large part of this edition, and in 1872—3 paid his expenses for a tour of exploration in n. Burmah. Other works by him were *The Karen Apostle*; *Memoir of Mrs. Helen M. Mason*; *Memoir of San Quala*; *The Story of a Workingman's Life, with Sketches of Travel*.

MA'N, GEORGE: patriot of Va.: 1726—1792, Oct. 17; b. Doeg's Neck plantation, near Mt. Vernon. His father, Col. George M., was fourth in descent from a royalist refugee to Va., 1651. M. shared with Washington and Patrick Henry the initiation of the Revolution in Va. He drew the non-importation resolves, adopted upon Washington's motion, 1769, by the Va. burgesses; 1774, July 18, he offered at a Fairfax co. meeting 24 resolutions which the Va. convention a month later adopted, and which the first continental congress substantially reaffirmed 1774, Oct.; was member of the Va. convention of 1775; chosen on the executive committee of safety; in the convention of 1776 drafted the Declaration of Rights and the state constitution; became a member of congress 1777, and ten years later was a leading member of the convention which framed the constitution of the United States and took extreme republican and anti-

MASON.

slavery ground, and with Patrick Henry opposed the acceptance of the articles framed at Philadelphia, insisting on additions, of which the larger part were subsequently made by congress and the states. He refused election to the first United States senate. In character and services in Va. his place is next to that of Washington, whom he greatly resembled in person and character.—His brother, Thomson M. (1730–85), was one of the revisers of the laws of Va., a member of the Va. house of delegates 1779 and 83, and, had he not suffered from hereditary gout, would probably have been hardly less prominent than his brother.

MA'SON, GEORGE HEMMING: English self-taught painter: 1818–1872, Oct. 22; b. Whitley. A medical student for five years, he abandoned science for art, 1844, and visiting France, Germany, and Switzerland, settled in Rome until 1858, producing there some important works, and many sketches, from which he painted after his return to England and settlement at Wetley Abbey. His later paintings, e.g., *The Evening Hymn*, 1868, *Girls Dancing by the Sea*, 1869, and *Harvest Moon*, 1872, were works of rare beauty, devoted to the peasant life of Staffordshire and simple human or natural scenes rich in pathos. Critics have deemed his genius akin to that of Millet.

MA'SON, JAMES MURRAY: 1798, Nov. 3—1871, Apr. 28; b. Analosta Island, Va. He was educated at the Univ. of Pennsylvania, pursued legal studies at William and Mary College, and 1820 was admitted to the bar. He soon became prominent in political affairs, served in the state legislature, was representative to congress 1837–39 and a member of the U. S. senate 1847–61. For a long period he was chairman of the senate committee on foreign relations. He was an earnest advocate of slavery, author of the Fugitive Slave Law, and a leader in the secession movement. In 1861 M. was a member of the Confederate congress, and with John Slidell was sent to represent the Confederacy in England and France. He was captured, Nov. 8, on board the English steamer *Trent* by Captain Wilkes of the national war steamer *San Jacinto*, and removed to Fort Warren in Boston harbor, where he remained a prisoner until 1862, Jan. 1, when, in response to a formal demand by the British govt., he was released. He then proceeded on his mission to England, which proved fruitless. Returning to this country at the close of the war, he died near Alexandria, Va.

MA'SON, JEREMIAH, LL.D.: eminent lawyer: 1768, Apr. 27—1848, Oct. 14; b. Lebanon, Conn.; son of Jeremiah M., who was prominent in local affairs and a col. in the war of the Revolution. The son was educated at Yale College, from which he graduated 1788. After studying law he was admitted to the Vermont bar 1791 and commenced the practice of his profession in Westmoreland, N. H. In 1794 he removed to Walpole, where he remained three years; then went to Portsmouth, where

he remained until 1832. He was elected to various political offices; served several terms in the state legislature and was prominent in the revision of the state code of laws. In 1802 he became attorney-gen. of the state. 1813-17 he was a member of the U. S. senate. In 1832 he removed to Boston, where he was engaged in highly successful practice until his death. For several years Daniel Webster was intimately associated with M., and gratefully acknowledged his strong and beneficent influence.

MA'SON, JOHN: b. King's Lynn, Norfolk, England; d. 1635, Dec. In early life he engaged in mercantile affairs; afterward became a naval officer, was sent to the Hebrides 1610, to subdue an insurrection, and six years later went to Newfoundland as gov. He published a description of the island 1620, and afterward made a survey and issued a map of the same. Meanwhile he explored the coasts of New England, secured, 1621, a title to the land from Salem to the mouth of the Merrimac river; and the following year obtained, in connection with Sir Fernando Gorges, a grant of land between the Merrimac and Kennebec rivers, extending inland to the St. Lawrence. He endeavored to impose on the colonists various feudal customs, also the rules of the Established Church, both of which met strong opposition. M. held various important positions in his native country, was gov. of Portsmouth, and a judge in Hampshire, and was sec. of the Plymouth Council for New England. Just before his death, in London, he was appointed vice-admiral of New England.

MA'SON, JOHN: 1600-72; b. England. In early life he was in military service, and at about 30 years of age he emigrated to America and settled in Dorchester, Mass. In 1635 he removed to Windsor, Conn., of which place he was one of the first settlers, soon becoming prominent in the history of the colony and remaining one of its leading men until his death. In 1637 he was commander of the force stationed at the fort in Saybrook at the mouth of the Connecticut river, and with Captain John Underhill led an expedition against the Pequot tribe of Indians, who had killed several settlers at Wethersfield and were determined to exterminate the whites. The force, of about 80 white men and 400 friendly Indians, including Mohegans, Narragansetts, and Niantics, was so skilfully handled that the principal Pequot fort and village, on the Mystic river about eight m. from New London, was surprised and destroyed in the early morning of May 26. More than 600 Pequots were killed, while of M.'s force only two were killed and about 20 wounded. By invitation of the general court he wrote an elaborate history of the Pequot war, a work which passed through two or three editions. For many years, and until his death, he held the position of major of the Conn. troops. He was also a magistrate for a long period, and 1660-70 was deputy-gov. In 1659 he removed to Norwich, at which place he died.

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MA'SON, JOHN MITCHELL, D.D.: clergyman and educator: 1770, Mar. 19—1820, Dec. 26; b. New York, where his father was pastor of the Assoc. Ref. Church. In 1789 he graduated at Columbia College, studied theology under his father's direction for two years, and went to the Univ. of Edinburgh to complete his education. In 1793 he became pastor of the church to which his father had long ministered. A fine scholar and eloquent speaker, he soon became the recognized leader of the Assoc. Ref. denomination. In 1801 he visited Great Britain by order of the synod to induce other clergymen of his faith to come to this country. The Univ. of Pennsylvania conferred on him the degree D.D. In 1805 he became prof. of theology in a theol. seminary which, largely through his efforts, the synod had founded. The following year he established a religious journal called the *Christian's Magazine*. In 1810, with a congregation which, largely on account of doctrinal differences, had withdrawn from the original church, he celebrated the Lord's Supper with members of the American Presbyterian Church; and for this irregularity was brought to trial by his synod. 1811-16 he was provost of Columbia College. Dr. M. was one of the originators of the American Bible Soc., and for some years held the office of its foreign sec. He visited Europe 1816-7, and preached in Switzerland with marked success. In 1821 he became pres. of Dickinson College, Carlisle, Penn., which position he relinquished three years later on account of failing health. In 1822 he transferred his relationship from the Ref. to the Presb. Church. He died in New York. Dr. M.—often called in New York the Prince of Pulpit Orators—presented strong thought in majestic diction, with impressive delivery. His *Works*, ed. by his son, were published in 4 vols. His *Memoirs* were published by Rev. Dr. Van Vechten 1856.

MA'SON, LOWELL, MUS.DOC.: eminent American music teacher and composer: 1792, Jan. 8—1872, Aug 8; b. Medfield, Mass. When only 20 years of age he taught music and led a church choir in Savannah, Ga. In 1821 he published the *Handel and Hadyn Collection of Church Music*, which became extremely popular and remained a favorite work for many years. In 1827 he removed to Boston, where he labored zealously to raise the standard of church music. He also formed musical classes, held institutes, and delivered lectures in many New England towns and cities, and was prominent in the establishment of the Acad. of Music in Boston. In 1837 he visited Europe for musical study and observation. He was a voluminous author, and published alone, or with the aid of George James Webb, more than 40 collections of church and Sunday-school music, glee books, etc. His aim was to interest the people in vocal music rather than to secure artistic effects. He accomplished more than any who preceded him had done, in making music popular in the church, school, and home; and though musical culture has now reached a higher standard than he presented, the value of his services in laying the found-

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dation and preparing the way for better systems cannot be over-estimated. Many of his church tunes are still very popular, and seem to be permanently united to familiar and cherished hymns. In 1855 the first degree of 'Doctor of Music' ever given in the United States was conferred on him by the Univ. of New York. Dr. M.'s musical attainments were controlled by a devout spirit. For many later years of his life he was a resident of Orange, N. J., where he was held in high regard, and where, at his home in Orange Mountain, he died.

MASON, STEVENS THOMSON: 1760-1803; b. Stafford, Va.; eldest son of Thomson M. and nephew of George M. He studied at William and Mary College; but was at the age of 20 a col. in the revolutionary army, rising to the rank of brig.gen. He was a member of the Va. convention 1788; and of the U. S. senate 1794-1803; always distinguished for his wit and eloquence.

MASON, WILLIAM, MUS.DOC.: pianist and composer: b. 1820, Jan. 24, Boston; son of Lowell M., MUS.DOC. After careful musical training in this country, and frequent public performances at concerts in Boston, he went (1849) to Leipzig, and studied pianoforte under Moscheles, harmony under Moritz Hauptmann, and instrumentation under E. F. Richter. He had instruction from Liszt, at Weimar, 1853-4; played publicly in Prague, Frankfort, and Weimar; returned to Amer. 1854, July; and shortly afterward made a concert tour notable as the earliest example of concerts offering no attraction but pianoforte playing. M. settled in New York, occasionally playing, but mainly teaching. In connection with Theodore Thomas and Carl Bergmann, M. established 1855-6 the M. and Thomas soirées of chamber music, for performance of the instrumental works of Haydn, Mozart, Beethoven, Schubert, Schumann, and others: these were continued until 1863. M. has pub. two pianoforte methods (Boston 1861-71) in conjunction with Eli Hoadley; and a system of pianoforte technics (1878) with Wm. S. B. Matthews as asst. ed. His compositions comprise more than 40 pieces for the pianoforte, a few for concert use, but mainly 'pièces de salon,' or chamber music. M. received the degree MUS.DOC. from Yale Univ. 1872.

MASON AND DIXON'S LINE: boundary e. and w. line, 280 m. long, separating Penn. on the n. from W. Va., Md., and Del. on the s. It begins at the n.e. corner of Md., and runs due w. on the parallel of lat. $39^{\circ} 43' 26.3''$ n. to the s.w. corner of Penn. It was, in the e. Atlantic states, the boundary between slave and free soil, which further w. followed the line of the O. river to the Miss., and was fixed for the territories beyond the Miss., by the Mo. Compromise of 1820, at the parallel of $36^{\circ} 30'$. The name M. and D.'s L. has been popularly applied to the whole divisory line between free and slave soil, but properly it belongs only to the s. boundary of Penn., surveyed by Charles Mason (q.v.) and Jeremiah Dixon 1763-67.

From 1681 to 1768 the want of a settled boundary be-

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tween Penn. and its s. neighbors, Md. and Va., occasioned dissensions and sometimes bloodshed along the border. The original grants to William Penn and Lord Baltimore fixed the 40th par. of lat. n. as the boundary between the two colonies. That line was, however, found to pass so far north as to put Penn's settlement at Philadelphia into Md., and to exclude Pennsylvania from Delaware Bay. To remedy this result of royal ignorance of the geography of the region, negotiations were undertaken, which succeeded only after nearly a hundred years of serious trouble. The small territory of Del. was purchased 1682 by Penn, but continued, as 'the three lower counties,' to have its separate assembly at New Castle. After Penn's death 1718, a suit between his heirs and those of Lord Baltimore was begun, to settle their respective bounds, and involving the question to whom Del. belonged. In 1732, May 10, the parties came to an agreement to have the lines s. and e. of Del. and between Penn. and Md. properly surveyed. For the upper end of Del., where New Castle was almost in Penn., it had been agreed to make a boundary by drawing the arc of a circle from the Del. river round to the Md. border, at a radius of 12 m. from the New Castle court-house. The survey of this line, and the accurate settlement of the e. and w. line, was a task not easy of accomplishment. Commissioners attempted it in 1732, 39, and 50: but could not agree, and the case still pended in the chancery court, until Lord Hardwicke gave a decision 1750, May 15, which was made the basis, ten years later, of a final adjudication signed by the contesting parties 1760, July 4. Commissioners and surveyors now spent three years, from 1760, Nov., measuring the base and tangent lines separating Del. from Md. To complete the work, Mason and Dixon, as more skilled mathematicians and surveyors, were brought from England. They began 1763, Dec., and had completed all but the last 36 m. of the e. and w. line bounding Penn. on the s., when Indian troubles caused suspension of the work, and M. and D., returning to Phila., were discharged, 1767, Dec. 26. At the end of every fifth mile a stone, brought from England, was placed, engraved on one side with the arms of Lord Baltimore, on the other with those of the Penns; while the intermediate miles were marked by smaller stones bearing M on one side and P on the other. The remaining 36 m. were run by Col. Alexander McLean of Penn. and Joseph Neville of Va., 1782, Nov., and verified and marked 1784. The surveys of the line were revised 1849, and found substantially correct.

MA'SON BEE: various species of bee which build their nests of agglutinated earth or grains of sand: see BEE. The nest is attached to walls or stones, sometimes to beams or logs, in sunny places. The interior contains about a dozen cells, in each of which is deposited an egg, with a piece of paste for the food of the larvæ. These bees sometimes repair old nests, and have fierce combats for the possession of them.

MASONRY.

MA'SONRY: art of construction in stone, brick, etc. The earliest existing examples are among the most magnificent specimens of the art. No nation has excelled the ancient Egyptians in stonework, whether we consider the size of the materials, or the unequalled exactness with which they are fitted together. The Egyptians did not use mortar in their important structures such as the pyramids, the joints being all carefully polished and fitted. Cyclopean M., of which remains exist in many parts of Greece and Italy, also exhibits stones of great size and with carefully adjusted joints (fig. 1). The walls of Mycenæ are among the earliest examples: these are built with huge irregular blocks, the spaces between being filled with smaller stones. The Etruscan specimens are more carefully executed; the stones are not squared, but they are all carefully fitted together. In

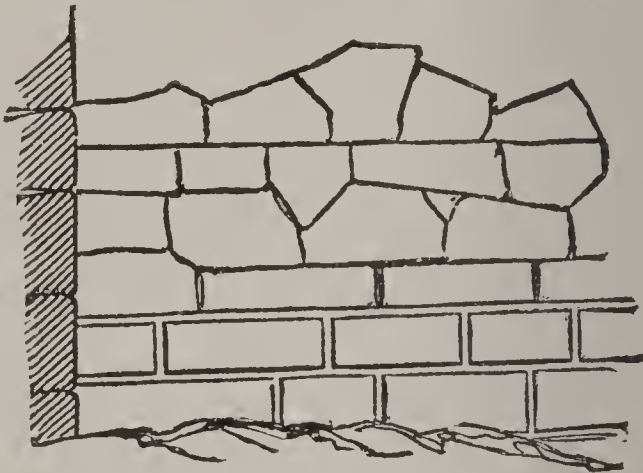


Fig. 1.—Wall in Peloponnesus.

some cases, the beds or horizontal joints are made level, and the upright joints left unsquared. No mortar is used in cyclopean masonry.

The M. of the Greeks and Romans very closely resembled that of the present day: *Rubble-work* (*opus incertum*), in which the stones are not regularly coursed; *Coursed-work*, where the joints are all level, and the stones of equal height; *Ashlar*, resembling the latter, but built with larger stones all carefully dressed on the joints. Many of the Roman buildings in the Eastern Empire were constructed with blocks of enormous size, as at Baalbec, where some of the stones are 60 ft. in length. Ashlar-work is frequently used for the exterior surface of walls, the inside being 'backed up' with rubble-work. This kind of work is sufficient for ordinary purposes; but where great strength is required, the whole thickness must be built with solid blocks. Ashlar-work is generally bedded in fine mortar, with one inch of oil-putty on the outer edge.

The early mediæval M. was of bad construction; in fact, little better than common rubble, with an occasional use of herring-bone work. The Normans improved on this kind of work, but their M. also was so bad, that most of the towers built by them either fell or had to

be taken down. The fall of the tower of Chichester Cathedral, a few years ago, was occasioned by defective Norman masonry. The art gradually improved with the advance of Gothic architecture, and ashlar was reintroduced for all important works. The ashlar-work so constantly used in Renaissance buildings has lately given place to a more picturesque style of masonry called hammer-dressed and squared work—the money saved on this cheaper work being applied with good effect in improving the appearance of the doors, windows, and other prominent features of the buildings.

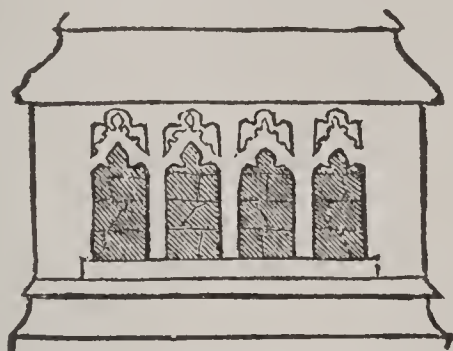


Fig. 2.—Flint Panelling from Fakenham Church, Norfolk, England.

There is one very simple rule, too little attended to in modern M.—viz., that all stones, at least when stratified, should be laid on their *natural bed*, for if set on edge, they are sure to scale off and decay under the influence of the weather. Special materials sometimes produce special kinds of work; thus, where large flints abound, the walls are often faced with these, split to form a clean face and good joints, and arranged in bands or panels between stone-work or brick-work (fig. 2). Where granite is the usual building material, ashlar-work is frequent, large blocks being more easily obtained and dressed than smaller ones. Where rag-stone only can be got, it is frequently neatly used in a similar manner to the flint above described.

MA'ONS, FREE: ancient fraternity, formerly of operative masons; now existing as a secret society with moral, social, and benevolent objects. The mason brotherhoods of the middle ages were organized incorporations, not substantially different in their nature from the other guilds, governed by rules of their own, and recruited from a body of apprentices who had undergone a period of probationary servitude. Legend and imagination have traced back the origin of freemasonry to the old Roman Empire, the Pharaohs, the Temple of Solomon, or even the times of the Tower of Babel and of the Ark of Noah. It is claimed that recent explorations in Egypt accord with the tradition that the order was in existence when the pyramids were built. The masonic craft probably became organized about the same time, and from the same set of causes, as other incorporated crafts; but a variety of circumstances combined to give it importance and influence beyond the rest. Men

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skilled in the hewing and setting of stones were naturally prized in an eminently church-building age. Their vocation necessarily involved travelling from place to place for employment. Wherever a great church or cathedral was built, the local masons had to be reinforced by a large accession of craftsmen from other parts; and the masons from neighboring towns and districts flocked to the spot, and took part in the work, living in a camp of huts reared beside the building on which they were engaged. A master presided over the whole, and every tenth man was a warden having surveillance of the rest. A mason, therefore, after going through his apprenticeship and probations, could not settle down, like another craftsman, among his neighbors and acquaintances, but must travel from place to place as employment called him; hence it became desirable or necessary to devise means by which a person once a member of the fraternity might be universally accepted as such, without requiring, wherever he went, to give fresh evidence of his skill, or having to undergo a renewed examination on his qualifications. In order to accomplish this end, and to enable a mason travelling to his work to claim the hospitality of his brother-masons on his way, a system of symbols was devised, in which every mason was initiated, and which he was bound to keep secret. This symbolism, invented for convenience of intercourse between members of the same craft, is probably the foundation for the popular notion that the masonic brethren were in possession of secrets of vital importance, the knowledge of which had been from generation to generation confined to their own order. It has been supposed that the possession of the masonic secrets enabled the masons to design the great cathedrals of the 13th and 14th c., whereas it is now certain that during the purest ages of Gothic architecture, both in France and in England, the architects were not members of the masonic fraternity at all, but either laymen of skill and taste, uninitiated in the mysteries of mason-craft, or oftener bishops and abbots. The masons who worked from the architect's design were, at the same time, not the mere human machines that modern workmen too generally are, but men who, in carrying out an idea imparted to them, could stamp an individuality of their own on every stone. Architecture was then a progressive art, and the architect of every great church or cathedral had made himself acquainted with the works of his predecessors, and profited by experience, adopting their beauties, and shunning their defects. The nature of the advance which architecture was then making has been compared by Mr. Fergusson to the advance with which we are familiar in the present day in ship-building and other useful arts. 'Neither to the masons nor to their employers, nor to the Abbé Suger, Maurice de Sully, Robert de Susarches, nor Fulbert de Chartres, is the whole merit to be ascribed, but to all classes of the French community carrying on steadily a combined

movement toward a well-defined end.' In Germany, however, the masons of the 14th c., who had attained wonderful skill in carving and in constructing arches, overstepping their original functions, took to a great extent the office of architect into their own hands; and it is undeniable that the churches designed by German masons, though rich in the most exquisite workmanship, are not comparable in the higher elements of beauty, to the works of non-masonic architects.

The epithet 'Free' was applied to the craft of masons in consequence of their being exempted by several papal bulls from the laws which regulated common laborers, and exonerated from various burdens thrown on the working-classes at large, both in England and on the continent. Like all the other guilds, the masons were bound by their rules to the performance of specific religious duties; but a craft, one of whose principal functions was church-building, was naturally under the more especial protection of the clergy. Yet a considerable time before the Reformation, we find the jealousy of the church excited from time to time by the masonic brethren, partly in consequence of their assuming other functions besides those of builders. In England, an act, passed in the minority of Henry VI., at the instigation of Henry of Beaufort, Cardinal of Winchester, prohibited the masons from holding their wonted chapters and assemblies. But this act was never enforced; and Henry VI., on coming of age, himself countenanced the masons, and was a member of the fraternity. Henry VII. became their grand master in England.

The history of freemasonry has been overlaid with interesting legend, partly from an exaggerated estimate of its importance in the development of architecture, and partly from a natural tendency to find a connection between mediæval masonry and the institution that passes under the same name in the present day. Modern (or so-called 'speculative') freemasonry is an innocent or, it may well be granted, benevolent mystification unconnected either with the building craft or with architecture. In its form as now known it is of British origin, and dates from the 17th c. According to the peculiar phraseology of the masonic brethren, it is founded in the 'practice of moral and social virtue;' its distinguishing characteristic is charity, in its most extended sense; and brotherly love, relief, and truth are inculcated by its precepts. Its real founders were Elias Ashmole and some of his literary friends, who amused themselves by devising a set of symbols, borrowed in part from the Knights Templars, between whom and the old masons an intimate relation is said to have subsisted, and in part from the Rosicrucians (q.v.). These symbols, which have since been adopted as the distinguishing badge of the brotherhood of 'Free and Accepted Masons,' include the sun, the moon, the compasses, square, and triangle. A number of so-called degrees or grades of masonry with fantastic names were established

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and conferred on the members.* Charles II. and William III. were masons; and a visible connection with operative masonry was kept up by the appointment of Sir Christopher Wren to the office of Grand Master. The 'Lodges' of Scotland profess to trace their origin to the foreign masons who came to Scotland 1150 to build Kilwinning Abbey; those of England go still further back, to an assemblage of masons held by St. Alban, the proto-martyr, at York, 926; and the mother-lodges of York and Kilwinning were, with insignificant exceptions, the parents of all the several lodges erected in different parts of Great Britain. Toward the close of the 18th c., it was in some quarters made a charge against freemasonry, that under its symbolism was concealed a dangerous conspiracy against all government and religion. This accusation, groundless as regards British freemasonry, produced so little effect, that, in an act passed 1799 for suppression of secret societies, an exception was made in favor of freemasons. On the continent of Europe political intriguers may sometimes have availed themselves of the secrecy afforded by freemasonry to further their schemes. In 1703 the English masons of the lodge of St. Paul opened the order to the membership of others than operative masons and builders; this was at the completion of St. Paul's Cathedral, London. This important change from the ancient to the present form was developed in 1717, when a Grand Lodge was formed in London, with power to grant charters to other lodges. Under its sanction, the first edition of the constitutions of the fraternity was published. The Grand Lodge was for a length of time on an unfriendly footing with the lodge of York, in consequence of having introduced various innovations not approved by the older lodge, and of having granted charters within the district which York claimed as its own. In 1742 the Duke of Cumberland was elected Grand Master of the Grand Lodge; and on his death, George IV., then Prince of Wales, succeeded to the office, which he held till he was appointed regent, when, it being considered unsuitable that he should longer exercise any personal superintendence, he took the title Grand Patron. In 1813, an understanding and a union were brought about between the two rival lodges by their respective Grand Masters, the Dukes of Kent and Sussex. The fraternity has since been managed by the 'United Grand Lodge of Ancient Free and Accepted Masons of England,' consisting of the Grand Master, with his Deputy, Grand Wardens, and other officers, the provincial Grand Masters, and the Masters and Wardens of all regular lodges, with a certain number of stewards annually elected, who meet four times a year for the dispatch of business, besides which

* The three principal grades are apprentice, fellow-craft, and master-mason; there being peculiar ceremonies at the making of each; and it is only on attaining to the degree of master-mason, that a brother enjoys the full benefits and privileges of the craft.

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There is an annual masonic festival, at which every mason is entitled to attend. The Grand Lodge of England has at present more than a thousand lodges under its protection, and has H. R. H. the Prince of Wales as its Grand Master.

In Scotland, the masons, when they were a real company of artificers, were, like other handicrafts, governed by wardens of districts appointed by the king. In 1598, a re-organization of the mason lodges was effected under William Schaw, principal warden and chief master of masons, who, in the following year confirmed the three 'Leid lodges' in their ancient order of priority—Edinburgh first, Kilwinning second, and Stirling third. In 1736, the operative element in mason lodges having become absorbed in speculative masonry, the Grand Lodge of Scotland was instituted by the representatives of 34 lodges, by whom also William St. Clair of Roslin was elected Grand Master, on account of his ancestors' alleged ancient connection with the mason craft, as patrons and protectors. Priority was assigned to the lodges according to the antiquity of their written records. The Lodge of Edinburgh (Mary's Chapel) was placed first, and Kilwinning second. The Lodge of Kilwinning did not formally object to this till 1741, when it withdrew from the Grand Lodge and resumed its independence. On relinquishing this position 1807, it was re-admitted into the Grand Lodge by the title of Mother Kilwinning, with precedence over the other lodges, and the Provincial Grand Mastership of Ayrshire rendered hereditary in its Master. For the foregoing information, we are indebted to Lyon's *Freemasonry in Scotland*, published by Messrs. Blackwood & Sons (1873)—a work of acknowledged historical value on this subject.

Besides granting charters of affiliation, the chief use of the Grand Lodge, whether of England or Scotland, consists in its acknowledged authority to enforce uniformity of ceremonial and other observances, and to settle all disputes that may arise within the lodges under its charge. The officers of the Grand Lodge are to a large extent delegates from the respective lodges; the delegation being in the form of proxy masters and wardens. As a source of revenue, for each member made by a lodge, a fee must be remitted to the Grand Lodge, whereupon a diploma of brotherhood will be issued.

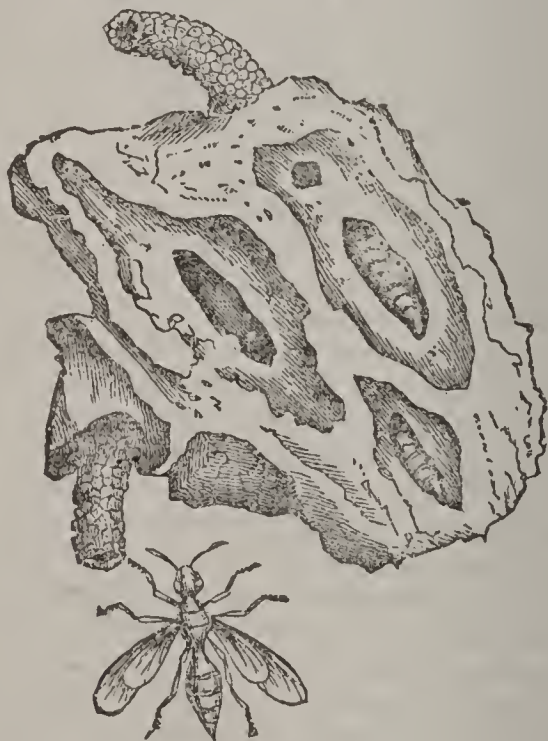
Modern freemasonry spread from Britain to the continent, to America, and to India. It was introduced into France 1725, Russia 1731, and Germany 1740. Grand Lodges now exist in France, Belgium, Netherlands, Denmark, Sweden and Norway, Prussia, Saxony, Hamburg, Switzerland, Italy, Portugal, Greece, Canada, Nova Scotia, and New Brunswick, in Central and S. America, and in British Columbia. Lodges in connection with European grand bodies exist in India, Africa, China, Polynesia, Turkey, Palestine, W. Indies, Australia, and New Zealand. Freemasonry is prohibited in Austria, Poland, Russia, and Spain, and by the Pope.

MASON WASP—MASORA.

In the United States, the first lodge in New England was opened in Boston 1733. Not long after the Revolution grand lodges were organized in all the states, and the order began to flourish. It has always had a goodly number of men eminent in business, political, and professional life. The statistics of 1890 showed a total membership in the United States of 673,643. In the British Amer. possessions there were 27,234 members.

The deep symbolical meaning supposed to be couched under the jargon of the masonic fraternity is probably as apocryphal as the dangers of masonry to government and order. A set of pass-words, and a peculiar grip of the hand, enable the initiated to recognize each other, and give a zest to their social meetings; and the institution, besides its more systematized charity, has the practical utility of enabling a mason, in a place where he is a stranger, to make himself known to his brother masons, and claim their protection and assistance.

MA'SON WASP (*Odynerus murarius*): species of wasp, which makes its nest by boring a cylindrical hole in hard sand, or even in the plaster of walls, on which an exudation from the mouth seems to act so as to soften it suffi-



Solitary Mason Wasp (*Odynerus murarius*), and Group of Nests and Larvæ.

ciently. At the orifice, an outer tube is constructed, sometimes two or three inches in length, of pellets formed in the excavation. In the interior, an egg is deposited, with a number of little caterpillars ready for food of the larva when hatched.

MASO'RA: see MASSORA.

MASQUE—MASQUERADE.

MASQUE, n. *mâsk* [F. *masque*—from. It. *mas'chera*, a mask (see MASK 1)]: a cover for the face; a piece of sculpture representing some grotesque form; a dramatic performance formerly so called, in which the company is masked (see below). **MASQUERADE**, n. *mäs'kér-äd'* a nocturnal meeting of persons wearing masks, at which they amuse themselves with dancing, etc.; disguise (see below); a Spanish equestrian diversion: V. to put into disguise; to go in disguise. **MAS'QUERAD'ING**, imp.: N. the assembling in masks. **MAS'QUERAD'ED**, pp. **MAS'QUERA'DER**, n. *-dér*, one who wears a mask; one disguised. *Note.*—There is no proper reason for making a distinction between MASK and MASQUE; the former may be called the Eng. and the latter the F. spelling. Any difference in their use is sufficiently indicated in the text. 'An entertainment' is the primary sense of MASK as found in OE authors, the use of the 'visor' at such entertainments having given rise to the sense, 'a cover or disguise for the face'—see Skeat.

MASQUE: species of dramatic performance, much in vogue in England toward the close of the 16th and the beginning of the 17th c. It was, in fact, the favorite form of private theatricals. The M. appears to have originated in the practice of introducing, in any solemn or festive processions, men wearing masks, who represented either imaginary or allegorical personages. At first, it was simply an 'acted pageant,' as in the well-known progresses of Queen Elizabeth: but gradually it expanded into a regular dramatic entertainment, and in the hands of men like Fletcher and Ben Jonson attained high literary beauty. Jonson's masques were represented at court, and were greatly relished. The taste for this kind of amusement, however, died away in the reign of Charles I., nevertheless, to the time of that monarch belongs the finest M. ever written—the *Comus* of Milton (1634). See Masson's *Life of Milton* (l. 542, et seq.).

MASQUERADE', or **MASKED BALL**: festive meeting, usually nocturnal, in which the host and guests assume fictitious characters, and disguise themselves more or less for the occasion. The public *mummers* of former times, Easter plays, Festivals of Fools, etc., frequent in most parts of Europe, but various in different countries, probably suggested the idea of the M., which, however, was not open to all, according to the well-understood rules of these ancient amusements, but was limited to some select class, or to those who paid a certain sum for admission. Catharine de' Medici introduced the regular M. at the French court. It found its way to England in the reign of Henry VIII., but did not reach any of the courts of Germany till the end of the 17th c. The *bal costumé* is a very modified and much less objectionable form of the masquerade. During the Carnival, public masquerades are held in the theatres and dancing-saloons of Paris, and on these occasions scenes of the most disgraceful profligacy are said to be enacted, in spite of the strict supervision of the police.

MASS.

MASS, n. *mās* [F. *masse*, a mass—from L. *massa*, that which adheres together like dough: It. *massa*, a lump: Gr. *massō*, I knead]: a body or lump; a large quantity; a heap; the quantity of matter in any body: V. to form into a mass; to form into a collective body; to assemble. **MASS'ING**, imp. **MASSED**, pp. *māst*. **MASSIVE**, a. *mās'iv*, weighty; ponderous; bulky and heavy. **MASS'IVELY**, ad. *-lī*. **MASSIVENESS**, n. *mās'iv-nēs*, state of being massive; great weight with bulk. **MASSY**, a. *mās'ī*, weighty; heavy; ponderous; massive. **MASS'INESS**, n. *-ī-nēs*, great weight with bulk; ponderousness. **MASS-MEETING**, a large public meeting for political discussion. **THE MASSES**, the people in general, as distinguished from the middle and higher classes; the populace.—**SYN.** of 'mass, n.': bulk; body; quantity; congeries; assemblage; multitude; the general; the mob; populace.

MASS, n. *mās* [F. *messe*; It. *messa*; Sp. *misa*, the sacrifice of the Mass—from L. *missa*, for *missō*, dismissal, in the phrase, *Itē, missa est*, 'Go, you are dismissed,' being the words employed in dismissing the catechumens when the celebration of the Eucharist began]: celebration of the Eucharist in the Rom. Cath. Chh.; the sacrifice of the Mass, or the celebration of the Lord's Supper in the Rom. Cath. Chh. **MASS-BOOK**, the Rom. Cath. Missal.

MASS: in the Roman Catholic Church, the Eucharistic service which, as in the Greek and other oriental churches, is held to be a real though unbloody offering, in which Christ is the victim; in substance the same with his sacrifice on the cross, and instituted as the means of applying its merits, through all ages, unto men. The doctrine of the M., as understood by Rom. Catholics, presupposes the Eucharist; though the latter doctrine does not necessarily involve the notion of a sacrifice. The arguments for and against this belief on which the M. is founded, do not fall within our province, which is limited to a brief history and explanation of the rite, as it exists. Whatever may have been the primitive character of the Eucharistic rite, the earliest Christian history, whether in the Acts of the Apostles, the canonical Epistles, or the writings of the most ancient of the Fathers, shows the existence of the rite of the Lord's Supper, which is still recognized in most Christian communities as the chief and most solemn part of public worship. According to Rom. Cath. belief, this rite is partly a sacrifice, partly a communion and participation thereof by the faithful; and of the names by which it is called in the works of the early Fathers, some—e.g., *agape*, and *hagia sunaxis*, refer to the latter, while others—e.g., *thusia*, *prosphorē*, *hiereion*—indicate the former signification. The etymology of the name now in use is somewhat obscure, but it is commonly referred to the proclamation by the deacon at the close of the general service *dismissing* the catechumens with these words—'Ite, missa est' ('Go, the assembly is dis-

missed'). By primitive use, the communion of the faithful appears to have formed part of the Eucharistic service; but afterward it came to pass that only the officiating priest communicated; whence arose, especially in the Western Church, the practice of 'private masses,' which has been in later times a ground of complaint with dissentients from Rome, even those who in other respects approach closely to the Roman doctrine. In the ancient writers, a distinction is made between the 'mass of the catechumens' and the 'mass of the faithful;' the former including all the preparatory prayers, the latter all that directly regards the consecration of the elements and the communion, at which solemn mystery the 'discipline of the secret' forbade the presence of the catechumens. With the cessation of this discipline, the distinction of names has ceased, but the distinction of parts is still preserved, the M. of the catechumens comprising all the first part of the M. as far as the 'preface.' The M. is now in general denominated according to the solemnity of the accompanying ceremonial, a 'Low Mass,' a 'Chanted Mass,' or a 'High Mass.' In Low M. a single priest simply *reads* the service, attended by one or more acolytes or clerks. The chanted M. differs only in this, that the service is *chanted*, instead of *read* by the priest. In High M. the service is chanted in part by the priest, in part by the deacon and sub-deacon, by whom, as well as by several ministers of inferior rank, the priest is assisted. In all these, however, the service, as regards the form of prayer, is the same. It consists of (1) an introductory prayer composed of Ps. xli., with the 'general confession;' (2), the Introit, followed by the thrice-repeated petition, 'Lord, have mercy,' 'Christ, have mercy,' and the hymn, 'Glory to God on high;' (3), the collect, or public and joint prayers of priest and people, followed by a lesson either from the Epistles or some book of the Old Testament, and by the Gradual (q.v.); (4), the gospel, commonly followed by the Nicene Creed; (5), the OFFERTORY (q.v.), after the reading of which come the preparatory offering of the bread and wine, and the washing of the priest's hands, in token of purity of heart, and the 'secret,' a prayer read in a low voice by the priest; (6), the preface, concluding with the trisagion, or 'thrice holy'—at which point, by the primitive use, the catechumens and penitents retired from the church; (7), the 'canon,' which is always the same, and which contains all the prayers connected with the consecration, the elevation, the breaking, and the communion of the Host and of the chalice, as also the commemorations both of the living and of the dead; (8), the 'communion,' which is a short scriptural prayer, usually appropriate to the particular festival; (9), the 'post-communion,' which, like the collect, was a joint prayer of priest and people, and is read or sung aloud; (10), the dismissal with the benediction, and, finally as a lesson, Jn. i. Great part of the above prayers are fixed, and form what is called the 'ordo' or 'ordinary' of the M. The rest, called the 'proper of the M.,'

differs for different occasions; some masses being 'of the season,' as of Lent, Advent, Passion-tide, 'Quarter-time,' etc.; others, of 'Mysteries,' as of the Nativity, the Circumcision, the Resurrection; others, again, of saints, as of an Apostle, a Martyr, or a Confessor; others, again, 'votive,' as 'of the Passion,' 'of the Dead,' 'for Peace,' etc. In all these various classes, as well as in the individual masses under each, the 'proper' portions of the M. differ according to the occasion, and in some of them certain portions of the 'ordinary,' as the 'Glory to God on high,' the 'Gradual,' or the 'Nicene Creed,' are omitted. On one day in the year, Good Friday, is celebrated what is called the 'M. of the Presanctified,' in which no consecration takes place, but in which the priest communicates of the Host which was consecrated on the preceding day. This usage is found also in the Greek Church, not alone on Good Friday, but on every day during Lent, except Saturday and Sunday. In the celebration of M. the priest wears peculiar vestments, five in number—two of linen, called 'amice' and 'alb;' and three of silk or precious stuffs, called 'maniple,' 'stole,' and 'chasuble,' the alb being girt with a cincture of flaxen or silken cord. The color of these vestments varies with the occasion, five colors being employed on different occasions—white, red, green, purple or violet, and black; and they are often richly embroidered with silk or thread of the precious metals, and occasionally with precious stones. The priest is required to celebrate the M. fasting, and, unless by special dispensation, is permitted to offer it only once in the day, except on Christmas-day, when three masses may be celebrated.

In the Greek and Oriental churches, the Eucharistic service, called in Greek *Theia Leitourgia* (The Divine Liturgy), differs in the order of its parts, in the wording of most of its prayers, and in its accompanying ceremonial, from the M. of the Latin Church (see LITURGY); but the only differences which have any importance as bearing upon doctrine, are their use of leavened bread instead of unleavened; their more frequent celebration of the 'M. of the Presanctified,' above referred to; the Latin use of private masses, in which the priest alone communicates; and, in general, the much more frequent celebration of the M. in the Latin Church. The sacred vestments, too, of the Greek and Eastern rites differ notably from those of the Latin; and in some of the former—e.g., the Armenian—a veil is drawn before the altar during that part of the service in which the consecration takes place, which is withdrawn only at the time of the communion. The service sometimes used on shipboard, and improperly called *Missa Sicca* (Dry Mass), consists simply of the reading of the prayers of the M., but without any consecration of the elements. It was resorted to with a view to avoiding the danger of spilling the sacred elements, owing to the unsteady motion of the ship. It is sometimes also called *Missa Nautica* (Ship Mass).—See LORD'S SUPPER, THE.

MASSACHUSETTS.

MASSACHUSETTS, *mäs-a-chū'sets*: state; one of the 13 original states in the American Union; ranking (1900) 1st in cotton, woolen, and worsted goods, and in cod and mackerel fisheries; 3d in value of domestic exports; 4th in value of manufactures; 4th in silk goods; 6th in iron and steel; 9th in agricultural implements; known familiarly as the Old Bay State.

Location and Area.—M. is in lat. $41^{\circ} 14'$ — $42^{\circ} 53'$ n., long. $69^{\circ} 53'$ — $73^{\circ} 32'$ w.; bounded n. by Vt. and N. H., e. by the Atlantic Ocean, s. by the Atlantic Ocean, R. I., and Conn., w. by R. I. and N. Y.; extreme length e. to w. 180 m.; extreme breadth 113 m.; 8,315 sq. m. (5,321,600 acres); highest elevation 3,505 ft.; cap. Boston.

Topography.—The extensive coast line is indented with numerous bays, harbors, and sounds, the largest of which are Buzzard's Bay, Vineyard Sound, Edgartown and Nantucket Harbors, Cape Cod Bay, Wellfleet Bay, Plymouth Harbor, Duxbury Bay, Massachusetts Bay, (comprising Boston, Lynn, Nahant, Marblehead, Salem, and Beverly Harbors), Gloucester Bay, Sandy Bay, and Annisquam Harbor. The chief coast islands, of which there are several hundred, are Martha's Vineyard, Nantucket, and several in the Elizabeth group. The Connecticut river which bisects the w. part of the state, and the Merrimac in the n.e. part, are the only rivers navigable for any considerable distance; but the Housatonic, Hoosic, Miller's, Nashua, Blackstone, Concord, Taunton, Charles, and Mystic, are invaluable for their great water-power. The chief lakes are Wenham and Quinsigamond, the latter a favorite place for college regattas. The surface varies from flat and sandy plains in the s.e. to the ridges of the Green Mountains in the w., the valley of the Conn. river having the richest soil in the state. The w. part contains two separate mountain ridges, the Taghkanic or Taconic, near and parallel with the N. Y. line, and the Hoosick or Hoosac further e. The former ridge has two notable peaks (highest in the state), Saddle Mountain or Greylock, in Adams, 3,505 ft., and Mt. Washington or Mt. Everett, in the s.e. corner of the state, 2,624 ft. The Hoosac ridge reaches a height of 1,200–1,600 ft., and is pierced by a famous railroad tunnel 5 m. in length. Near the w. bank of the Connecticut river are the isolated peaks, Mt. Tom, 1,214 ft. high, and Sugar Loaf. Near the e. bank is Mt. Holyoke, 910 ft.; and in Princeton tp., Worcester co., is Mt. Wachusett, 2,018 ft.

Climate.—The climate is variable, and generally cool, with e. winds prevailing; annual mean temperature 45° in the n.w., 50° in the s. e.; spring 43° , summer 71° , autumn, 51° , winter 21° ; July is the hottest month in Boston, mean 73° ; and Jan. the coldest, mean 28° . As the mercury in Boston sometimes falls to 10° below zero in winter, and rises to 100° in summer, the city has a range between extremes of 110° . Average rain-fall in Boston 45 inches, in state 55, equally distributed through the seasons.

Geology.—M. is composed chiefly of metamorphic rocks,

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In the e. these are overspread with the sand and bowlders of the drift formation. Syenite and granite prevail along the coast, with numerous and noted quarries. Coarse conglomerates and argillaceous slates of a remote age, abound in the vicinity of Boston; gneiss, talcose and mica slates are found in broad belts running n. and s. from the e. portion of the state to the Housatonic river; and the Connecticut river valley discloses the triassic, or new red sandstone formation, with extensive and famous fossil footprints of birds and animals, some of great size. The conglomerates and argillaceous slates are connected with coal-bearing strata near the R. I. line, which in Bristol and Plymouth cos. contains beds of anthracite. Here is a region of altered Silurian sandstones and calcareous formations extending along the Housatonic river and thence to the Vt. border, which contains numerous beds of iron ore and glass sand of high value. Gold, silver, copper, and lead deposits have been discovered in various parts of the state, and a few of them, especially the gold, silver, and lead in Essex co., have been worked. The state has large tracts of valuable forest, and, by bounties, encourages the planting of timber trees in regions unfit for agriculture. Oak, ash, and hickory are plentiful in various parts; birch, maple, and beech predominate in the w., chestnuts in the central region, and hard and white pine and cedar in the s.e.

Zoology.—M. has but few wild animals remaining, and scarcely any large game birds. Rabbits, squirrels, and small game birds, great owls, fish hawks, gulls, brant, wild ducks, and some reptiles are plentiful; and the cod, mackerel, halibut, bass, and tautog are very prolific, well-known, and the source of several great industries.

Agriculture.—In 1890 there were in M. 34,374 farms containing 2,998,282 acres, of which 1,627,024 were improved and 1,341,258 unimproved. The valuation of the farm lands, with fences and buildings, was \$127,538,284; implements and machinery \$5,938,940; live stock on hand \$14,200,178. The farm products in 1889 were valued at \$28,072,500, including 63,638 horses; 196 mules and asses; 256,128 neat cattle; 91,483 swine; 51,438 sheep, from which were clipped 241,314 lbs. of wool; dairy products, including 82,571,924 gallons of milk, 8,358,703 lbs. of butter, and 122,900 lbs. of cheese; barley, 38,715 bushels from 1,785 acres; buckwheat, 31,300 bushels from 2,473 acres; Indian corn, 1,330,101 bushels from 34,010 acres; oats, 338,819 bushels from 14,331 acres; rye, 117,091 bushels from 10,665 acres; wheat, 1,813 bushels, etc. In 1900 the farms numbered 37,715, comprised 3,147,064 acres, and were valued, with improvements, stock, etc., at \$182,646,704.

Manufactures.—M. had (1890) 26,923 manufacturing establishments with aggregate capital \$630,032,341, employing 485,182 persons, paying in wages \$239,670,509, using materials valued at \$473,199,434, yielding products valued at \$888,160,403. The chief industry, according to capital employed, was manufacture of cotton goods, which had 187 establishments, with capital \$128,838,837, employed 76,213

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persons, paid wages \$26,230,667, used materials valued at \$56,586,283, and yielded product valued at \$100,202,882. Then followed (of industries employing capital of \$2,000,000 and upward) boots and shoes (factory product) establishments 1,057, capital \$44,567,702 (all departments more than \$51,000,000), employing 69,934 persons, paying wages \$34,949,698, using materials \$63,928,182, yielding product \$116,387,900; foundry and machine-shop products, establishments 711, capital \$36,621,187, employees 25,027, wages \$15,492,917, materials \$14,447,803, product \$38,906,680; woollen goods, establishments 172, capital \$34,911,187, employees 19,813, wages \$7,586,575, materials \$21,815,199, product \$35,771,161; gas (illuminating and heating), establishments 72, capital \$26,063,751, employees 1,423, wages \$1,062,382, materials \$1,747,013, products \$6,203,125; paper, establishments 85, capital \$22,467,036, employees 8,111, wages \$3,906,641, materials \$12,210,458, products \$21,524,173; worsted goods, establishments 33, capital \$21,204,909, employees 12,021, wages \$4,556,997, materials \$14,259,116, products \$21,933,775; dyeing, establishments 33, capital \$11,996,154, employees 4,352, wages \$1,909,107, materials \$2,801,364, products \$6,496,215; clothing (men's, factory product), establishments 221, capital \$11,254,626, employees 8,196, wages \$3,733,499, materials \$11,865,905, products \$21,242,647; carpentering, establishments 2,050, capital \$9,299,845, employees 17,092, wages \$12,088,985, materials \$16,915,443, products \$34,336,615; carpets and rugs, establishments 7, employees 5,144, wages \$1,892,072, materials \$4,731,873, products \$7,275,009; carriages and wagons, establishments 430, employees 4,641, wages \$2,969,541, materials \$3,163,947, products \$7,607,869; furniture, establishments 578, capital \$9,665,461, employees 8,333, wages \$4,728,100, materials \$5,414,957, products \$13,386,880; hosiery, establishments 74, capital \$4,497,940, employees 4,675, wages \$1,495,260, materials \$2,552,705, products \$5,082,087; leather and leather goods, establishments 220, capital \$11,802,660, employees 8,404, wages \$4,829,197, materials \$20,300,221, products \$28,346,741; iron and steel, establishments 96, capital \$9,584,000, employees 4,846, wages \$2,590,000, materials \$5,011,000, products \$9,092,000; cutlery, establishments 82, capital \$2,424,669, employees 1,784, wages \$909,008, materials \$52,766, products \$1,837,825; bread and bakery products, establishments 703, capital \$2,775,676, employees 4,479, wages \$2,471,186, materials \$5,923,736, products \$10,755,915; brick and tile, establishments 110, capital \$3,014,277, employees 3,261, wages \$1,090,450, materials \$598,587, products \$2,314,406; flouring and grist-mill products, establishments 238, capital \$2,908,303, employees 770, wages \$386,153, materials \$5,959,480, products \$6,906,493; wire and wire-work, establishments 58, capital \$6,844,000, employees 5,270, wages \$2,596,000, materials \$6,135,000, products \$10,788,000; lumber and planing-mill products, establishments 628, capital \$9,711,000, employees 7,030, wages \$3,666,000, materials \$6,988,000, products \$13,222,000; printing and publishing establishments,

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832. capital \$12,743,000 employees 10,386, wages \$6,721,000, materials \$4,980,000, products \$20,013,000; slaughtering and meat-packing, establishments 24, capital \$7,187,000, employees 1,892, wages \$963,000, materials \$16,372,000, products \$20,222,000; silk and silk goods, establishments 20, capital \$3,353,296, employees 3,216, wages \$1,296,399, materials \$3,251,893, products \$5,557,569; rubber goods, establishments 50, capital \$6,836,190, employees 3,739, wages \$1,700,538, materials \$5,311,889, products \$8,518,612; masonry, establishments 745, capital \$5,476,324, employees 10,384, wages \$7,287,066; materials \$7,993,115, products \$17,580,907; musical instruments, establishments 42, capital \$6,157,000. In 1900 there were 29,180 manufacturing, with \$823,264,287 cap.; prodts., \$1,035,198,989.

Fishing.—In 1880 M. owned more than half of the fishing vessels in the United States and ranked first in cod and mackerel fisheries. The industry employed a capital of \$14,334,450, 17,165 fishermen, 2,952 shoremen, 1,054 vessels (tonnage 83,232), 6,749 boats. In 1890 the total capital invested, excluding the value of vessels and boats, shore property and apparatus, was \$7,483,193, showing a decrease of 50 per cent. in ten years. The number of persons employed was 16,250, of whom 557 were shoremen. There were engaged in all fisheries 933 vessels of 61,200 tons, valued at \$3,147,017, and 8,623 boats, valued at \$394,178. The shore property, including other capital, was valued at \$2,393,052, and the minor apparatus at \$1,548,946. The total value of the products was \$6,367,033, subdivided as follows: general fisheries, \$5,234,968; whale fisheries, \$988,632; seal fisheries, \$5,669; menhaden fisheries, \$10,030; oyster fisheries, \$127,729.

Commerce.—In 1889 M. had 174 steam vessels of 80,527 tons, 1,621 sailing vessels of 306,749 tons, and 33 unrigged craft of 23,968 tons; total 1,828 vessels of 411,244 tons. There were built in the same year 56 vessels of 4,692 tons. M. comprises one U. S. internal-revenue district, with headquarters in Boston, and has 11 customs stations, Barnstable, Boston, Edgartown, Fall River, Gloucester, Marblehead, Nantucket, New Bedford, Newburyport, Plymouth, and Salem. The internal-revenue receipts for the year ending, 1895, June 30, were: from distilled spirits \$1,047,266, tobacco 340,436, fermented liquors \$1,254,778, oleomargarine \$17,666, aggregate receipts \$2,687,178. M. has a large and increasing foreign, coastwise, and interstate trade. The imports of merchandise at the ports of Barnstable, Boston, Charlestown, Fall River, Gloucester, Marblehead, New Bedford, Newburyport, Plymouth, Salem and Beverly for 1902 aggregated in value \$78,618,221; exports, \$86,695,609.

Railroads.—Since the opening of the first railroad, 1835, the surface of M. has become a close network of steel rails. In 1874 there were 1,782 m. of main track and 917 m. of double track and sidings in operation, total 2,699 m.; 1895, main track 2,114 m.; with double and side tracks, etc., 4,228 m.; capital stock of companies about \$150,000,000, gross income \$68,154,906. The street railroads had in main, double, and siding tracks (1890) 650 m.; number of

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employees 5,583; of passengers 165,005,835; total cost \$23,-310,674.

Religion.—In 1885 the Congl. churches led, with 528 churches, 91,787 members; and were followed by the Bapt., 289 churches, 48,883 members; Meth. Episc., 319 churches, 45,517 members; Rom. Cath., 272 churches; Unit., 185 churches, 11,000 members, etc. Later reports showed Congl. 27 assoc., 25 conferences in the gen. assoc., 540 churches, 678 ministers, 98,009 members, 59,-774 families, 114,178 Sunday-school students; Bapt. 14 assoc., 302 churches, 358 ministers, 54,439 members, 309 Sunday schools, 6,361 officers and teachers, 57,350 students, church property valued at \$3,969,400; Prot. Episc (diocese of M., organized 1784) 182 parishes and missions, 186 ministers, 25,879 communicants, 12,536 families, 2,255 Sunday-school officers and teachers, 18,434 students; Unit. 193 churches, 151 ministers; Univ. 122 parishes, 108 churches, 6,550 members, 9,393 families, 110 Sunday schools, 15,636 students, value of church property \$2,062,450; and Rom. Cath. 258 churches, 33 chapels and stations, 1 abp., 1 bp., 497 priests, 130 seminarians, Rom. Cath. pop. 680,000. In 1890 M. had 2,547 churches, with 942,751 members; of these there were 559 Congl. churches with 101,890 members; Meth. 422 churches with 61,138 members; Bapt. 340 churches with 62,966 members; Rom. Cath. 381 churches with 614,627 members; total value of church property \$46,835,014.

Education.—The estimated number of children 5 to 18 years of age (1895) was 565,600; total number enrolled in the schools 412,953; number in daily attendance, 313,693; whole number of teachers employed, male 1,046, female 10,981, total 12,027; average monthly salaries of teachers, males \$128.55, females \$48.38; number of schoolhouses 4,590; value of all school property \$35,056,695; there were 216 public high schools, with 1,055 teachers, 11,784 male and 15,269 female students, total students 27,053; the state normal schools were 6 in number, with 84 teachers and 187 male and 1,309 female students, total students 1,496. The universities and colleges for men or for both sexes numbered (1894-5) 9, with 656 instructors and 6,412 students; colleges for women 5, with 274 instructors and 2,346 students. The chief universities and colleges are: Harvard Univ., Cambridge; Tufts Coll., near Cambridge; Boston Univ., Boston; Amherst Coll., Amherst; Williams Coll., Williamstown; Clark Univ., Worcester; College of the Holy Cross (Rom. Cath.), Worcester; the leading colleges for women are Mt. Holyoke Coll., South Hadley; Smith Coll., Northampton; Wellesley Coll., Wellesley. There are also many professional and technological schools and numerous private schools of all grades.

Illiterary.—Of the population of ten years old and upward (1890) 114,468, or 6.2 per cent., were illiterate; of these the native whites numbered 9,727, foreign whites 101,715, and colored persons 3,026.

Finances and Banking.—In 1880 M. had a public indebtedness, state, co., and municipal, of \$91,283,913, and an

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estimated real and personal valuation of \$2,795,000,000. 1885, Jan. 1, the state debt was \$31,432,680, town and municipal \$63,595,568, total \$95,028,248; state sinking fund \$21,043,828; no floating state debt. In 1903, Jan. 1, state debt \$84,268,735; assessed real and personal valuation \$3,878,671,070; state tax assessed \$1,500,000; receipts \$7,416,741; expenditures \$14,622,341; state expenses \$5,484,894. The payment of state aid to invalid pensioners and their dependent families, which began soon after the opening of the civil war, ceased by legal limitation 1890, Jan. 1. 1890, Jan. 1, the savings bank commissioners reported 177 savings banks with assets of \$350,072,392; 93 co-operative banks, \$7,106,751; 13 trust companies, \$67,603,464; 2 mortgage loan companies, \$1,834,737; 2 collateral companies, \$375,378; 2 savings banks in hands of receivers, \$563,579; total institutions 289, assets \$427,556,303. In 1902, Sept., there were 241 national banks (cap. \$95,317,200), 36 state banks (cap. \$2,075,643), 19 private banks; and 128 building-loan cos.

State Charities, Penal Institutions, etc.—The institutions for the insane, with number of patients and cost of maintenance (1895), were Worcester Hospital 861 patients, \$196,734 expense; Worcester Asylum 447 patients, \$76,026 expense; Taunton Hospital 846 patients, \$144,780 expense; Northampton Hospital 546 patients, \$116,611 expense; Danvers Hospital 948 patients, \$175,454 expense; total for six institutions 4,315 patients and \$819,217 expense. There are, in addition to the above, patients in municipal and private asylums and in almshouses, etc., maintained at the expense of the state, making the total number of insane at state expense 6,768. An additional asylum at Medfield, costing \$1,000,000, was opened 1896. The school for the feeble-minded at Waltham had 423 inmates, expenses \$70,000. The Horace Mann School for the Deaf, Boston, had 11 instructors and 113 pupils. Perkins Institution and Massachusetts School for the Blind, South Boston, had 36 instructors and 119 pupils.

The State Prison, Boston, had 683 prisoners. Other institutions are the Soldiers' Home, in Chelsea, the State Farm, State Almshouse, State Reform School, State Industrial School for Girls, and various hospitals and reformatories.

History.—According to Prof. Eben N. Horsford of Harvard Univ., the country extending from R. I. to the St. Lawrence was first seen by Bjarni Herjulfson A.D. 985; the Charles river was discovered by Leif Erikson 1000; the vicinity was explored by Leif's brother Thorwald 1003; and the first colony was established by Thorfinn Karlsefni 1007. The name of Vinland was given the region because of the abundance of wild grapes. Acting on the researches of Prof. Horsford, the American Geographical Soc. celebrated the discovery of the ancient city or town of Norumbega, at a memorial tower erected near the junction of Stony brook with Charles river, in Watertown, Mass., 1889, Nov. 21, and caused a tablet, crediting the Northmen with the discovery of the region,

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to be let into the tower. Prof. Horsford's interesting and well-studied theory has not found universal acceptance with historical scholars. In 1497 the Cabots visited the coast, and as they were in the employ of the English at the time, the crown claimed possession of the region on the ground that they had discovered it. Bartholomew Gosnold (q.v.) is credited with having been the first English settler in M. With 32 colonists he made his second voyage to America 1602, anchored in York Harbor, Me., May 14, and seeking a more suitable locality, entered M. Bay on the following day, and afterward planted his colony on an island which he named Elizabeth, in honor of the queen of England. The first purely religious movement toward M. was 1620, Sep. 6, when a company of 100 English Independents who, being persecuted by the established church, had fled to Holland in search of religious liberty, sailed from Plymouth, England, in the 180-ton ship *Mayflower* for a new home in America. The vessel reached Cape Cod Nov. 9, and after a party had selected an advantageous spot for the colony, the settlers landed at the present Plymouth Dec. 21. Before leaving England they had secured valuable privileges from the Va. Co.; and soon after landing they made a treaty of friendship with Massasoit, chief of the Indians in that region. The first two years the colonists suffered severely from the weather and crop failures, but received considerable accessions, under a patent. 1622 an expedition was sent from England to establish a plantation in M. Bay, and the new colonists, under the encouragement of the Plymouth party, settled at the present Plymouth. Unable to secure a separate and independent crown patent, the Plymouth colonists were forced by circumstances to become a law and state unto themselves. They framed laws and chose civil officers for their govt., and thus evolved a gov., council, and legislature. In 1628 John Endicott landed another expedition at Salem. This had been organized by an English company, which had obtained a grant of territory between the Atlantic and Pacific oceans, and extending 3 m. s. of Charles river and M. Bay and 3 m. n. of the highest water of the Merrimac river. Soon after Endicott's arrival, a patent was obtained for the M. Bay Company, a corporation was established according to the charter, and the increased number of associates became a body politic, with a gov., dep.gov., and 18 assistants, who were to be elected annually. In 1629 the gov. of the company was transferred from London to New England; John Winthrop took charge of another expedition and was appointed gov.; a new emigration was fostered; and during 1629-30 there were more than 1,500 arrivals from England. About this period settlements were made at Charlestown, Boston, Watertown, Dorchester, Roxbury, Mystic, and Saugus. After Gov. Winthrop decided to remove his settlement from Charlestown to the Trimountain peninsula (Boston) in order to secure better water, he bought the whole peninsula, excepting a tract of 6 acres, for £30, and the

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colonists engaged actively in founding the metropolis of the M. Bay colony. The first general court of the colony was held in Boston 1630, and 1634 a beacon was erected on an elevated site on Trimountain (present Beacon Hill, Boston), to alarm the colonists in case of invasion.

The Plymouth and M. Bay colonies maintained amicable relations with each other, but each supported a separate and independent govt. for more than 60 years. Each had internal troubles which were controlled by local laws and officers; together they suffered from the Pequot Indian war 1636-7 and King Philip's war 1675-6; and together they were harassed with difficulties with the crown that originated in a belief in England that the colonies were seeking to make themselves independent. The colonists maintained themselves by their own efforts, with no assistance from England; and when the crown attempted to annul the charter of the M. Bay colony and appointed a commission to govern the colony, the general court took steps to fortify Boston harbor and to raise and drill troops for the purpose of resisting, if necessary, any interference with the civil and religious liberties of the people. Charles II., after his restoration, made demands on the colonists, which one portion strongly opposed and another was willing to yield rather than provoke further trouble. In 1664 royal commissioners reached Boston, charged with the duty of investigating the affairs of the colony, but were unable to fulfil their mission, and were recalled. The king reproved the colonists, and ordered the gov. and others to appear in London and answer for the opposition to his commissioners, but all refused to go. At the close of King Philip's disastrous and costly war, during which the colonists were left by England entirely to their own resources, another royal commissioner came over, Edward Randolph, and vainly endeavored to carry out the purposes of the previous commissioners. The king, further exasperated, then planned to bring all the New England colonies under the jurisdiction of a royal gov., and to annul the charter of the M. Bay colony. The right of jurisdiction over Me. and N. H. was denied M. by the privy council. M. retaliated by purchasing the title to Me. The colonists made fruitless efforts to effect a reconciliation with the king, conceding many important considerations in the interest of peace and loyalty. In 1684 the English high court of chancery gave judgment against the gov. and company of M., and declared their charter forfeited. The general court was abolished, and Joseph Dudley was appointed pres. He was superseded by Sir Edmund Andros (1686), who for more than two years maintained an arbitrary, vindictive, and tyrannical administration not only over all the New England colonies but over N. Y. and N. J. as well. On the receipt of news (1689, Apr.) that William of Orange had landed in England, the people of Boston, aided by sympathizing neighbors, rose in arms, arrested and imprisoned Andros and all his subordinates, recalled the general court, and

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chose the former dep.gov., Thomas Danforth, to be acting gov. An official notice of the proclamation of William and Mary in England was soon afterward received, and the new king was simultaneously proclaimed in the Plymouth and M. Bay colonies. In 1690 M. aided England in the intercolonial war between the possessions of England and France, and issued the first paper money seen in the colonies to pay the troops. Two years later the king granted a new charter by which the Plymouth and M. Bay colonies were consolidated into one govt., and appointed Sir William Phips, a native of New England who had commanded the M. forces in the intercolonial war, gov. of the consolidated colony. M. was divided into Suffolk, Essex, Middlesex, and Hampshire cos., which had 55 towns and a pop. of about 40,000; and Plymouth into Plymouth, Bristol, and Barnstable cos., having 17 towns and pop. of about 7,000. The witchcraft excitement occurred in Salem (q.v.) during Gov. Phips's administration. In 1703-4 and 1722-5 the province suffered severely from raids by French colonists in Canada and their Indian allies, and the disturbances were ended only by the almost complete extermination of the Indian tribes adjacent. During the war between France and England 1744-48, M. contributed effectively to the expedition that captured Louisburg (1745), and to the movements for the conquest of Canada; and in the second war, 10 years later, was equally liberal with men and means in the interest of the crown.

About 1767, when M. had a pop. of about 247,000, the home govt. began to devise measures of oppression, first in the shape of taxation, then in commercial restrictions, and afterward in the establishment of large bodies of royal troops on the soil of M. as a menace against opposition. Following early plans for securing more revenue from the colony, came the passage and repeal of the Stamp Act, the massacre in Boston 1770, the destruction of the cargo of tea 1773, the Port Bill 1774, the arming of the people, the seizure by the militia of the arsenal at Charlestown, the organization of the provincial congress in Concord, and the shedding of the first blood in the revolutionary war at Lexington and Concord 1775, Apr. 19. From the beginning of her great struggle against oppression, M. had the active sympathy of her sister colonies, who had had far less cause for complaint than she, and through the long war that followed the appeal to arms at Lexington and Concord, M. bore her part nobly, promptly, and unstintingly.

In 1780 M. adopted her first constitution, which, though several times amended, is virtually the supreme law of the state to-day. In 1786 Daniel Shays (q.v.) incited the people in the w. part of the state to rebel against the authorities, and the insurrection was not suppressed without bloodshed. M. ratified the federal constitution 1788, Jan.; was opposed to the war with England 1812, but though her commerce suffered greatly by it, aided the govt. with large drafts of seamen for the navy; was

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represented in the Hartford Convention (q.v.) and furnished its presiding officer, George Cabot, 1814; and had its long-standing dispute with the 'district' of Maine (q.v.) settled by congress 1820, when the former district was admitted into the Union as a state. During the civil war M. contributed 159,165 men to the union army and navy, or 13,492 more than were called for by the federal govt. The losses included 3,749 killed in action, 9,086 died from wounds or disease, 5,866 never accounted for, and 15,645 discharged for disability contracted in service. The war expenditures of M. were \$30,162,200.

Government.—The executive authority is vested by the constitution in a gov. (salary \$8,000, and an executive council consisting of the gov., lieut.gov. (\$2,000), and 8 citizens representing so many divisions of the state, all elected annually; the legislative authority is vested in 'the general court,' comprising a senate of 40 members, and a house of representatives of 240 members, all elected annually, salary of each \$750 per annum; the judicial authority is vested in a supreme judicial, superior, probate, insolvency, municipal, police, and district courts. All judges are appointed by the gov. with the consent of the council, and hold office during good behavior. The supreme judicial court consists of a chief justice (salary \$6,500 per annum), and 6 assoc. justices (each \$6,000); superior court of a chief justice (\$5,300) and 9 assoc. justices (\$5,000); district judges receive \$4,000 per annum. The sec. of state receives \$3,000 per annum; treas. \$4,000; auditor \$2,500; atty.gen. \$4,000; United States pension agent \$4,000; 3 internal revenue collectors \$3,000–\$4,500; collector of customs (Boston) \$8,000; and United States naval officer \$5,000.

The successive govts. with their terms of service are as follows: *Plymouth Colony*: John Carver 1620–1; William Bradford 1621–33; Edward Winslow 1633–4; Thomas Prentice 1634–5; William Bradford 1635–6; Edward Winslow 1636–7; William Bradford 1637–8; Thomas Prentice 1638–9; William Bradford 1639–44; Edward Winslow 1644–5; William Bradford 1645–57; Thomas Prentice 1657–73; Josiah Winslow 1673–81; Thomas Hinckley 1681–6; Sir Edmond Andros (gov.gen.) 1686–9; Thomas Hinckley 1689–92; *Mass, 1st charter*: John Endicott (act'g) 1629–30; John Winthrop 1630–34; Thomas Dudley 1634–5; John Haynes 1635–6; Henry Vane 1636–7; John Winthrop 1637–40; Thomas Dudley 1640–41; Richard Bellingham 1641–2; John Winthrop 1642–4; John Endicott 1644–5; Thomas Dudley 1645–6; John Winthrop 1646–9; John Endicott 1649–50; Thomas Dudley 1650–51; John Endicott 1651–4; Richard Bellingham 1654–5; John Endicott 1655–65; Richard Bellingham 1665–73; John Leverett 1673–9; Simon Bradstreet 1679–84; Jos. Dudley (pres.) 1684–6; Sir Edmond Andros (gov.-gen.) 1686–9; Thomas Danforth (actg.) 1689–92; *Mass, 2d charter*: Sir William Phips 1692–4; William Stoughton (act'g) 1694–9; Richard Coote (Earl Bellomont) 1699–1700; William Stoughton (act'g) 1700–1; Council 1701–2; Joseph Dud-

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ley, 1702-15; Council, part 1715; Joseph Dudley, part 1715; William Tailer (act'g) 1715-6; Samuel Shute 1716-23; William Dummer (act'g) 1723-28; William Burnett, part 1728; William Dummer (act'g) 1728-30; William Tailer (act'g), part 1730; Jonathan Belcher 1730-41; William Shirley 1741-49; Spencer Phips (act'g) 1749-53; William Shirley 1753-56; Spencer Phips (act'g) 1756-7; Council, part 1757; Thomas Pownall 1757-60; Thomas Hutchinson (act'g), part 1760; Sir Francis Bernard 1760-69; Thomas Hutchinson (actg), 1769-71; Thomas Hutchinson, 1771-74; Thomas Gage, part 1774; Prov. Congress, part 1774-5; Council, part 1775-80; *State*: John Hancock 1780-5; James Bowdoin 1785-7; John Hancock, part 1787-93; Samuel Adams (act'g), part 1793-4; Samuel Adams 1794-97; Increase Sumner, part 1797-99; Moses Gill (act'g) part 1799-1800; Caleb Strong 1800-07; James Sullivan, part 1807-8; Levi Lincoln (act'g), part 1808-9; Christopher Gore 1809-10; Elbridge Gerry 1810-12; Caleb Strong 1812-16; John Brooks 1816-23; William Eustis, part 1823-25; Marcus Morton (act'g), part 1825; Levi Lincoln 1825-34; John Davis, part 1834-5; Samuel T. Armstrong (act'g), part 1835-6; Edward Everett 1836-40; Marcus Morton 1840-1; John Davis 1841-43; Marcus Morton 1843-4; George N. Briggs 1844-51; George S. Boutwell 1851-53; John H. Clifford 1853-4; Emory Washburn 1854-5; Henry J. Gardner 1855-58; Nathaniel P. Banks 1858-61; John A. Andrew 1861-66; Alexander H. Bullock 1866-69; William Claflin 1869-72; William B. Washburn, part 1872-74; Thomas Talbot (act'g), part 1874; William Gaston 1874-76; Alexander H. Rice 1876-79; Thomas Talbot 1879-80; John D. Long 1880-83; Benjamin F. Butler 1883-4; George D. Robinson 1884-87; Oliver Ames 1887-90; J. Q. A. Brackett 1890-91. William E. Russell 1891-93; Frederick T. Greenhalge, 1894-97; Roger Wolcott, 1897-1900; William M. Crane, 1900-02; John L. Bates, 1902-04.

Counties, Cities, and Towns.—M. is divided into 14 cos. In 1890 the leading cos. were: Suffolk 484,780; Middlesex 431,167; Essex 299,995; Worcester 280,787; Bristol 186,465; Hampden 135,713; and Norfolk 118,950; cities and towns: Boston 448,477; Worcester 84,655; Lowell 77,696; Fall River 74,398; Cambridge 70,028; Lynn 55,727.

Politics.—State, congressional, and presidential elections on Tuesday after the first Monday in Nov. The state govt. (1903) was republican, with a party majority of 21 in senate, 71 in house, 92 on joint ballot. M. had (1903) 16 electoral votes. Her votes for pres. and vice-pres. have been as follows: 1789, George Washington and John Adams 10; 1792, George Washington and John Adams 16; 1796, John Adams 16 for pres., and Charles C. Pinckney 13, S. Johnson 2, and Oliver Ellsworth 1 for vice-pres.; 1800, John Adams and Charles C. Pinckney; 1804, Thomas Jefferson and George Chinton 19; 1808, Charles C. Pinckney and Rufus King; 1812, George Clinton 22 for pres., and Jared Ingersoll 20 and Elbridge Gerry 2 for vice-pres.; 1816, Rufus King and John E. Howard;

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1820, James Monroe 15 for pres., and Richard Stockton 8 and Daniel D. Tompkins 7 for vice-pres.; 1824, John Quincy Adams and John C. Calhoun; 1828, John Quincy Adams and Richard Rush; 1832, Henry Clay and John Sergeant 14; 1836, Daniel Webster and Francis Granger; 1840, William Henry Harrison and John Tyler; 1844, Henry Clay and Theodore Frelinghuysen 12; 1848, Zachary Taylor and Millard Fillmore; 1852, Winfield Scott and William A. Graham 13; 1856, John C. Fremont and William L. Dayton; 1860, Abraham Lincoln and Hannibal Hamlin; 1864, Abraham Lincoln and Andrew Johnson 12; 1868, U. S. Grant and Schuyler Colfax; 1872, U. S. Grant and Henry Wilson 13; 1876, Rutherford B. Hayes and William A. Wheeler; 1880, James A. Garfield and Chester A. Arthur; 1884, James G. Blaine and John A. Logan 14; 1888, Benjamin Harrison and Levi P. Morton; 1892, Benjamin Harrison and Whitelaw Reid; 1896, William McKinley and Garret A. Hobart; 1900, William McKinley and Theodore Roosevelt.

Population.—(1790) white 373,324, colored 5,463, total 378,787; (1800) white 416,393, colored 6,452, total 422,845; (1810) white 465,333, colored 6,737, total 472,040; (1820) white 516,419, colored 6,740, total 523,159; (1830) white 603,359, colored 7,049, total 610,408; (1840) white 729,030, colored 8,669, total 737,699; (1860) white 1,221,432, colored 9,602, total 1,231,066; (1870) white 1,443,156, colored 13,947, total 1,457,351; (1880) white 1,763,782, colored 19,303, total 1,783,085; (1890) 2,238,943; (1900) 2,420,982.

MASSACHUSETTS BAY: indentation on the e. coast of Mass. between Cape Cod and Cape Ann, 70 m. long, 25 m. wide, but including in its irregular form Plymouth Bay, Cape Cod Bay, and several others, with numerous small islands.

MASSACRE, n. *mās'sa-kér* [F. *massacre*, slaughter; *massacrer*, to slaughter: OF. *macecrier*, a butcher—probably connected with L. *macellum*, a meat-market]: the indiscriminate and unnecessary slaughter of human beings; butchery: V. to put human beings to death without the forms of law, or on insufficient grounds; to slaughter indiscriminately; to butcher human beings. **MAS'SACRING**, imp. *sa-krīng*. **MAS'SACRED**, pp. *-kêrd*: **ADJ.** barbarously murdered.—**SYN.** of 'massacre, n.': slaughter; carnage; murder; destruction.

MASSAGE—MASSASOIT.

MASSAGE, n. *mās'sāj* or *mā sā:h'*: remedial method, based on the use of a variety of mechanical processes, chiefly passive. The positive value of M., especially in chronic cases, is proved by experience. M. is defined as *motion with pressure*, communicated by the hands of an operator or *masseur*, to the soft, yielding, fleshy parts of the invalid, in prescribed order and degree. At the present day the far more successful practice of M. is due in part to prevalence of a better knowledge of disease, and in part to improved modes of application. Recently the means of applying M. have been much increased by introduction of mechanical power, in addition to that of the hands. This affords the following, among other advantages: it is easily and instantly adjustable by the patient himself, so that he may always secure agreeable sensations; it is tireless, so that a desirable amount of the remedial effect is attainable; the rate of the processes is not confined to that of hand-motions, so that the scope of the remedy is vastly increased beyond the possibilities of the hand, thus opening a new remedial field.

Some obvious therapeutic principles in M. are the following: Combined pressure with motion displaces and replaces—i.e., refreshes the nutritive fluids of the vital organism, thereby promoting both the assimilative and dissimilative processes essential for health. The use by the system of oxygen is much increased—more being taken up from the air by respiration; and the wasting ingredients are thereby changed to the forms required for dismissal. This last effect may be intensified to the desired degree. M. displays peculiar remedial power in nervous diseases.—See works by Dr. George H. Taylor.

MASSAG'ETÆ: nomadic people, who inhabited the broad steppes on the n.e. of the Caspian Sea, n. of the river Araxes or Jaxartes. Herodotus says that they had a community of wives, that they devoured their aged people, and that they worshipped the sun and offered horses to him. Cyrus is said to have lost his life in fighting against them. B.C. 530. Niebuhr and Böckh assigned them to the Mongolian, but Humboldt and others, to the Indo Germanic or Aryan family.

MASSA LUBRENSE, *mās'sā lô-brēn'sā*: pleasant Italian town, 17 m. s. of Naples by sea. M. stands amidst the loveliest scenery of Italy, on a cliff projecting into the sea, and commanding a fine view of the Bay of Naples. It dates from the early Greek period, and contains many remains of Roman antiquities. It is famed for the beauty of its women. Pop. 3,600.

MASSASAWGA, n. *mās-sa-saw'ga* [Indian name]: the prairie rattlesnake, found in some states westward from Ohio. It has large scutes on the head, and the rattle is much smaller than in other species.

MASSASOIT, *mās'sa-soyi*: Indian sachem, of the Pokanokets (or Wampanoags), with whose territory the Pilgrim colony at Plymouth began the settlement of New England (1620): d. 1660, about 80 years of age. He had been 'the greatest chief of the tribes between Narragansett Bay and the Piscataqua,' until a terrible

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pestilence, about 1618, cut down a numerous and powerful tribe of 30,000 to a few hundreds, leaving the territory, now s. Mass., at some distance about Plymouth, almost uninhabited. M. appeared to the Plymouth colonists first 1621, Mar. 22, with 60 warriors, and readily entered into a league of friendship, which lasted 50 years, until the old chief's younger son, Philip, became hostile (1671), and brought on 'King Philip's war' (1675-6). The residence of M. was in what is now Warren, R. I., near a remarkable spring which still bears his name. Winslow and Hopkins, who visited him here from Plymouth, 1621, July, found his lodging a sty of the most wretched description; his bed a low platform of sticks and mats, one end of which he occupied with his wife and gave the other to his guests, while two other Indians crowded on, until stench, vermin, and mosquitoes drove the Englishmen out of doors. In the midst of summer abundance, with 40 lazy savages in attendance, M.'s guests had nothing to eat the first day, and on the second only their share of three small fishes set before the whole company. Winslow made a second visit to M. 1623, Mar., upon a report that he was about to die, and, by energetic measures, nursing, cooking, and applying simple remedies, rescued him from his starved, filthy, and almost dying condition. M. showed his gratitude by revealing a plot of the Indians scattered along the coast to destroy all the English, which, but for this discovery and the prompt killing by Miles Standish of the heads of it, would have blotted out the colony. The sons of M., Wamsutta and Metacomet, obtained from the court at Plymouth, after their father's death, English names, Alexander and Philip. Alexander died within two years, and Philip, who succeeded, 1662, was killed 1676, Aug. 12, in the war that he had raised against the English.

MASSENA, *mās-sē'na*: town in St. Lawrence co., N. Y., 170 m. n.n.w. of Albany. There are three villages. M. borders on St. Lawrence river, and is intersected by Raquette and Grass rivers, which afford good water power. M. village is on Grass river; and about a m. s.e., on the w. bank of the Raquette, are the M. springs, whose saline and sulphurous qualities make the place a summer resort. There are several hotels. Pop. (1880), town 2,739; (1890) 2,740; (1900) 3,904.

MASSENA, *mâ-sā-nâ*, ANDRÉ: Duke of Rivoli, Prince of Essling, and a marshal of France; 1758, May 6—1817, May 4: b. Nice; of humble (said to be Jewish) parentage. In his youth, he served as cabin-boy in a small vessel; and from 1775 was 14 years in an Italian regt. in the pay of France, but left it because his plebeian birth precluded him from promotion. Early in the French Revolution, he joined a battalion of volunteers 1792, and soon rose to high military rank. 1793, Apr., he was col.; in Dec. gen. of division. He greatly distinguished himself in the campaigns in upper Italy,

winning the battle of Loano and the great victory at Rivoli. After Jourdan's defeat at Stockach, 1799, Mar. 25, the chief command of the army in Switzerland devolved on him in circumstances of great difficulty, but he kept his ground against the Archduke Charles, and finally, by his victory over Suwarroff and the Russians at Zurich, 1799, Sep. 25—taking 200 guns and 5,000 prisoners—freed France from danger of invasion. After the battle of Marengo, Bonaparte gave him command of the army of Italy. In 1804, he was made a marshal of the empire. In 1805, he again commanded in Italy, first holding in check Archduke Charles, and then utterly defeating him at Caldiero Oct. 30; and subsequently he signalized himself in the terrible contest at Essling for the village of Aspern (q.v.). In 1810, he was intrusted with the chief command in Spain, and compelled the British and their allies to fall back to Lisbon; but being unable to make any impression on Wellington's strong position at Torres Vedras, he resigned his command, ascribing his failure to the disobedience of his three generals, Ney, Reynier, and Junot. He offered his services, however, again, when Napoleon was preparing for the Russian campaign, but was only intrusted with the command in Provence, and in this position he remained till the Restoration, when he gave in his adhesion to the Bourbons, and was made a peer. On Napoleon's return from Elba, he invited M. to follow him, but received no response. After the second Restoration, M. retired into private life. M. was the greatest soldier and general of Napoleon's marshals: on the battle-field he was swift, unwavering, full of the resources of genius. In private life he showed lack of education, moroseness, and the Italian indolence, and withal was as extortionate as a Roman pretor. His master called him a robber, and is said to have offered him a present of 1,000,000 francs if he would give up peculation.

MASSETER, n. *mās-sē'tér* [Gr. *masēlēr*, one that chews—from *massāōmai*, I chew]: a short, thick muscle at the posterior part of the cheek, which raises the lower jaw. MASSETERIC, a *mās'ē-tēr'īk*, applied to an artery, a vein, or a nerve connected with the masseter muscle.

MASSEY, *mās'ī*, GERALD: English socialist poet, journalist, and lecturer: b. 1828, May 29, near Tring, Hertfordshire, of poor, and illiterate parents. With very scant instruction, working in a silk mill at 8 years of age, and later at straw-plaiting, he read whatever books he could get, and knew the Bible, *Robinson Crusoe*, and the *Pilgrim's Progress*, when he went to London to become an errand boy. He had already begun to write verses for provincial journals, and about 1846 made a vol. of *Poems and Chansons*. The French revolution of 1848 greatly roused him, and 1849, Apr., with some fellow-workmen, he started a cheap ultra-radical weekly journal, the *Spirit of Freedom*. The Rev. Charles Kingsley encouraged and aided him: his poems gained entrance

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to London journals, and drew attention. M. became a spiritualist, and lectured extensively in Great Britain, and 1873 in the United States. Since 1863 he has had a civil list pension. Besides several vols. of earnest and stirring verse he has written on Shakespeare's Sonnets. His published works are: *The Ballad of Babe Christabel, and other Poems* (1853); *Craigcrook Castle* (1856); *Robert Burns, and other Lyrics* (1859); *Voices of Freedom and Lyrics of Love* (1859); *Havelock's March, and other Poems* (1861); *Shakespeare's Sonnets never before Interpreted* (1866); and *A Tale of Eternity, and other Poems* (1870).

MASSICOT, n. *mās'ī-kōt*, or MASTICOT, n. *mās'tī-kōt* [F. *massicot*]: protoxide of lead, occurring in shapeless masses, of yellow color, brittle, with earthy fracture; the dross that forms on melted lead exposed to a current of air, and roasted till it acquires a uniform yellow color—used as a pigment

MASSIE, *mās'sē*, NATHANIEL: 1763, Dec. 28—1813, Nov. 13: western pioneer and soldier: b. Goochland co., Va. At 17 years of age he entered the army of the Revolution; settled in Ky. 1783; removed to Manchester, O., 1790; laid out on his own land the town of Chillicothe; engaged in Indian wars of the northwest, and became gen. of O. militia; was delegate to the convention which framed the first constitution of O.; served repeatedly in the state legislature, and one term as speaker of the senate; was candidate for gov. 1807, and was declared elected, but resigned before entering office; died at Paint Creek Falls, Ohio.

MASSILLIA: see MARSEILLE.

MASSILLON, *mās'il-on*: city in Stark co., O., 65 m. s. of Cleveland, 95 m. n.e. of Columbus; at the intersection of the Pittsburg Ft. Wayne and Chicago, the Lake Shore and Tuscarawas Valley, and the M. and Cleveland railroads, and on the O. canal connecting with Lake Erie; on the e. bank of the Tuscarawas river in the midst of one of the best Amer. coal fields. It is regularly laid out and compactly and substantially built, with many handsome residences, a fine opera house, nine churches, three banks, large school-houses, rolling mill, flouring mills, paper mill, sash factory, machine shops, iron bridge factory, harvester works, agricultural implement works, blast furnaces, and gas works. It ships from its quarries Ohio white sandstone to all parts of the United States, and great quantities of iron ore, wool, grain, flour. Pop. (1890) 10,092; (1900) 11,944.

MASSILLON, *mâ-sêl-yōng* or *mâs-sê-yōng*, JEAN BAPTISTE: distinguished pulpit orator: 1663, June 24—1742, Sep. 28; b. Hyères, France. His father, a notary, designed the boy for his own profession; and only after repeated and persistent efforts, M. obtained his father's permission to enter the congregation of the Oratory 1681. While he was engaged in teaching theology in one of the houses of the congregation in the diocese of Meaux, he

made his first essay in the pulpit at Vienne. His funeral oration on Villars, the Archbishop of Vienne, was eminently successful, and led to his being called by the superiors of the Oratory to Paris, where he first had the opportunity of hearing Bourdaloue, whose style and manner had great influence in forming his taste. Like Bourdaloue, he avoided the declamatory manner and theatrical action then popular in the French pulpit; but the earnest impressiveness of his look and voice more than supplied the vigor and energy which other speakers sought from these adventitious aids. His course of ecclesiastical conferences delivered in the seminary of St. Magloire, Paris, established his reputation. The criticism of Louis XIV., after his course of Advent sermons at Versailles 1699, that 'when he heard other great preachers, he felt satisfied with them, but when he heard M. he felt dissatisfied with himself,' well characterizes the eloquence of this great Christian orator, who, more than any of his contemporaries, was able to lay bare the secret springs of human action, and to use the feelings and the passions of his audience as arms against themselves. He was again appointed to preach the Lent at Versailles 1704; but though the king was again equally warm in his admiration of the preacher, M. was never afterward invited to preach in the presence of this monarch; yet his funeral oration on the Prince de Conti, 1709, was one of the greatest triumphs of his oratory. Indeed M. was too honest to gain the favor of the court by flattery; while his ethical perceptions and his mental balance were too refined to permit his descent into the cheap and noisy fierceness of denunciation which often gains favor with the populace as zeal against vice. Soon after the death of Louis XIV., M., 1717, was named Bp. of Clermont, and in the same year was appointed to preach before the young king, Louis XV., for which occasion he composed his celebrated *Petit Carême*—a series of ten sermons. It was not till 1719 that he was consecrated Bp. of Clermont, in which year also he was elected a member of the Acad; and 1723 he preached the funeral oration of the Duchess of Orleans, his last public discourse in Paris. From this time for nearly a score of years he lived almost entirely for his diocese, where his great charity, gentleness, and pastoral fidelity gained him the affections of all. Among his works, his masterpieces are usually considered to be, beside the *Petit Carême*, his sermons on the Prodigal Son, on Death, for Christmas day, and for the 4th Sunday in Advent. His works, mainly sermons and similar compositions, were collected, 12 vols., by his nephew, and published 1745-6—later editions are those of Beaucè (4 vols. 1817), Mequignon (15 vols. 1818), and Chalandre (3 vols. 1847).

MASSINGER, *mă's'ën-jér*, PHILIP: English dramatist: 1584-1640, Mar. 16; b. (it is supposed) at or near Wilton, seat of the Earls of Pembroke, of which family his father was probably a retainer. Of his boyish days and studies, nothing is known; from his plays, we are, however, cer-

tified that he was a classical scholar. He entered St. Alban's Hall, Oxford, as a commoner 1602, and quitted the university suddenly without a degree, on the occasion, it is surmised, of his father's death. After leaving Oxford his career cannot be clearly traced. He came to London, and wrote for the stage, sometimes on his own account, frequently—as was the fashion of the time—in conjunction with others. He produced many plays, the dates of which are obscure. He seems to have lived in straitened circumstances, and to have been of a melancholy turn of mind. He was found dead in his bed, and was buried in the churchyard of St. Saviour's, by the hands of the actors. In the parish register stands the pathetic entry: 'March 20, 1639-1640, buried Philip Massinger, a stranger.' There has been controversy as to his religious belief: no decisive proof has been found, but the tone of several of his plays shows deep sympathy with the highest ideals of the Rom. Cath. faith—and this at a time when that faith was in utmost popular disfavor in London.

Taken as wholes, M.'s plays are not very impressive, except to a thoughtful reader. In development of plot M. is counted next to Shakespeare; but he gives his strength to delineating one ruling passion, while most of his men and women seem left in dim outline. The plays have striking merits in detached passages. He was of grave and serious mood, and his reflective passages often rise into a rich, elaborate music. His finest writing is in *The Virgin Martyr*, but his best plays are *The City Madam*, and the *New Way to Pay Old Debts*—the last of which has even yet some hold on the stage. Gifford's edition of M. (1805) is admirable; more recent is Cunningham's (1870).

MASSINIS'SA: see MASINISSA.

MASSIVE, MASSIVELY, MASSIVENESS, MASSY, MASSINESS: see under Mass.

MASSORAH, or MASORAH, n. *mās'ō-râ* [Heb.—from *masar*, to hand down (i.e., to posterity); or possibly from *asar*, to bind, to fix within limits]: Hebrew critical work on the verbal text of the Old Test. by several rabbins of the 8th and 9th c. MAS'SORET'IC, a. *-rēl'ik*, or MAS'SORET'ICAL, a. *-ī-kāl*, pertaining to the Massorah or its authors. MASSORITE, n. *mās'ō-rīt*, one of the writers of the Massorah.—The *Massorah*, chiefly a collection of critical notes on the text of the Old Testament, its divisions, accents, vowels, grammatical forms, letters, etc., was evidently necessary for accurate preservation of the sacred documents, as, according to the early mode of Shemitic writing, only the consonants, and these without any stop or break, were written; a proceeding which, in the course of time, must naturally have produced a vast number of variants, or rather different ways of reading and interpreting the same letters, by dividing them into different words with different vowels and accents. The origin of the M., fixing an immutable reading upon

each verse, word, and letter, and ending the exercise of unbounded individual fancy—which, for homiletical purposes alone, was henceforth free to take its own views—is shrouded in mystery. The first traces of it are found in certain Halachistic works treating of the synagogue rolls of the Pentateuch, and the mode of writing them: see HALACHA. Some of the earliest works on the subject have survived in their titles only, e.g., *The Book of the Crowns*, *The Book of the Sounds*, etc., attributed to the Soferim, or Masters of the Mishna (q.v.). There can hardly be a doubt that the M., like the Halacha and Hag-gada (q.v.) was the work, not of one age or century, but of many ages and centuries; as, indeed, we find in ancient authorities mention made of different systems of accentuation used in Tiberias, Babylon (Assyria), and Palestine. It was in Tiberias first that the M. was committed to writing between the 6th and 9th c. after Christ. Monographs, memorial verses, finally, glosses on the margins of the text, seem to have been the earliest forms of the written M., which gradually expanded into one of the most elaborate and minute systems, laid down in the 'Great Massorah' (about the 11th c.), whence an extract was made known under the name of the 'Small Massorah.' A further distinction is made between M. *textualis* and *finalis*, the former containing all the marginal notes; the latter, larger annotations, which, for lack of space, had to be placed at the end of the paragraph. The final arrangement of the M., printed first in Bomberg's Rabbinical Bible (Ven. 1525), is due to Jacob ben Chajim of Tunis, and to Felix Pratensis. The language of the M. is Chaldee, and besides the difficulty of this idiom, the obscure abbreviations, contractions, symbolical signs, etc., with which the work abounds, render its study exceedingly difficult. Nor are all its dicta of equal value; they are not only sometimes utterly superfluous, but even erroneous. Of its 'countings,' we may adduce that it enumerates in the Pentateuch 18 greater and 43 smaller portions, 1,534 verses, 63,467 words, 70,100 letters, etc.—a calculation to a certain degree at variance with the Talmud.—An explanation of the M. is found in Elijah Levita's (q. v.) *Masoreth Hammesoreth* (trans. into German by Semler, Halle, 1772), and Buxtorf's *Tiberias* (1620), a work abounding with exceedingly curious information on the text of the Old Testament.

MASSOWAH, *mâs'sô-wâ*, or MESOWAH, or MASAUA: islet and town on the w. coast of the Red Sea, between the sea and frontier of Abyssinia, 15° 30' n. lat., 39° 30' e. long. It was given by Turkey to Egypt 1866, and was retained by Egypt with the rest of the Red Sea shores, when the Egyptian Soudan was given up 1884. In 1885 it was annexed by Italy, which holds it as a military and commercial station. The island is of coral, the soil formed partly from the rock, partly from sand and broken shells. It is only about a mile and a quarter in circumference, and is about 200 yards from the mainland. It is almost wholly occupied by the town, and contains

a pop. of about 8,000, mostly Arabs. The Abyssinian coast is very destitute of harbors, and M. is of great importance as a seat of commerce, having large trade by sea with Bombay and with the Arabian coast, particularly with Jiddah and Yembo; and large trade by caravans with Cairo on the one hand, and with Gondar and all interior Abyssinia on the other. Caravans start at all seasons for Cairo and for Gondar; but most numerous in January at the end of the rains, and in June before the swelling of the waters. Wheat, rice, maize, durra, salt, tobacco, gunpowder, sugar, cotton and silk goods, scarlet cloth, glass wares, arms and hardwares are among principal imports from the more distant parts of the world. From Abyssinia and the coasts of the Red Sea, M. receives and exports ivory, rhinoceros' horns, wax, ostrich-feathers, tortoise-shell, myrrh, senna, pearls, etc. M. has all the worst characteristics of an oriental town. Its streets are mere lanes, and excessively dirty.

MASSYS', QUINTIN: see MATSYS.

MAST, n. *mâst* [Icel. *mastr*; Ger., Dut. *mast*; It. *masto*, the mast of a ship: OF. *mast*; F. *mât*]: one of the large upright timbers or poles which support the rigging of a ship. MAST'ED, a. having masts. MAS'TER, n. *-tér*, a vessel having masts. MAST'LESS, a. having no masts.

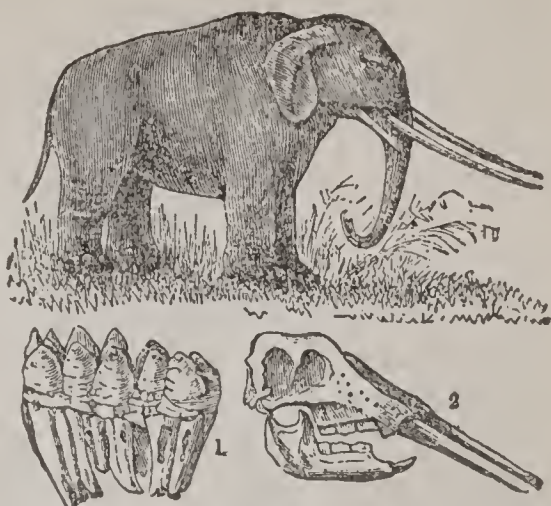
MAST, n. *mâst* [Dut. *mesten*, to feed, to fatten: Ger. *mast*, the fattening of animals; *masten*, to fatten—*lit.*, edible fruit]: the fruit of oaks or beech-trees used for fattening hogs. MAST'FUL, a-*fûl*, abounding in the fruit of the oak, beech, or chestnut.

MAST: upright or nearly upright spar, resting on the keelson (q.v.) of a ship, and rising through the decks to a considerable height, for the purpose of sustaining the yards on which the sails are spread to the wind. It is usually in joints or lengths, one above the other, the lowest and strongest being the *mast* proper, distinguished by its position as the fore, main, or mizzen mast. Above this rise successively the *top-mast*, the *top-gallant-mast*, the *royal-mast*, and—though very rarely used—the *sky-scraper*. The full height of all the masts together, in a first-rate ship of war, was about 250 ft. As, when a strong wind is blowing, the pressure upon the canvas carried by a M. amounts to many tons, the M. itself must be of great strength. In some modern vessels, hollow iron masts are used, with great success, as being much lighter than those of wood; but the majority are of Norway fir of the best quality. In small vessels the M. is made of one tree; but it is considered stronger when 'a made mast,' that is, when constructed of several pieces riveted together, and strengthened by iron hoops. The M. is sustained, when fixed, by the shrouds, as supports on each side, by the Stay (q.v.) in front, and the back-stays behind.

Iron and Steel Masts.—As far back as 1838, the City of Dublin Steam-packet Company had a steamer with hollow iron masts, the masts acting also as ventilating funnels



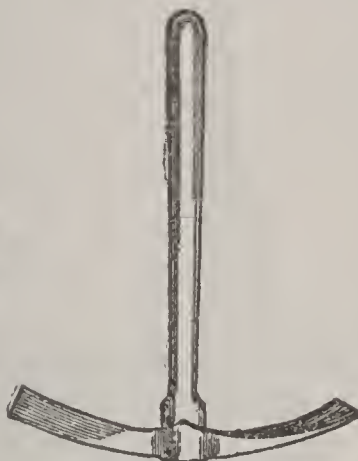
May-apple (*Podophyllum peltatum*.)



Mastodon Restored: 1, Molar Tooth, weighing 17 pounds; 2, Skull of Mastodon of Miocene period.



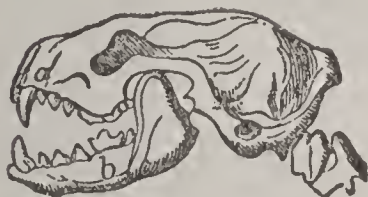
Matadore.



Mattock.



Masled Armor (11th century).



Skull of *Mustela foina* (White-breasted or Beech Marten): *a*, Maxilla superior; *b*, Maxilla inferior, or mandible.



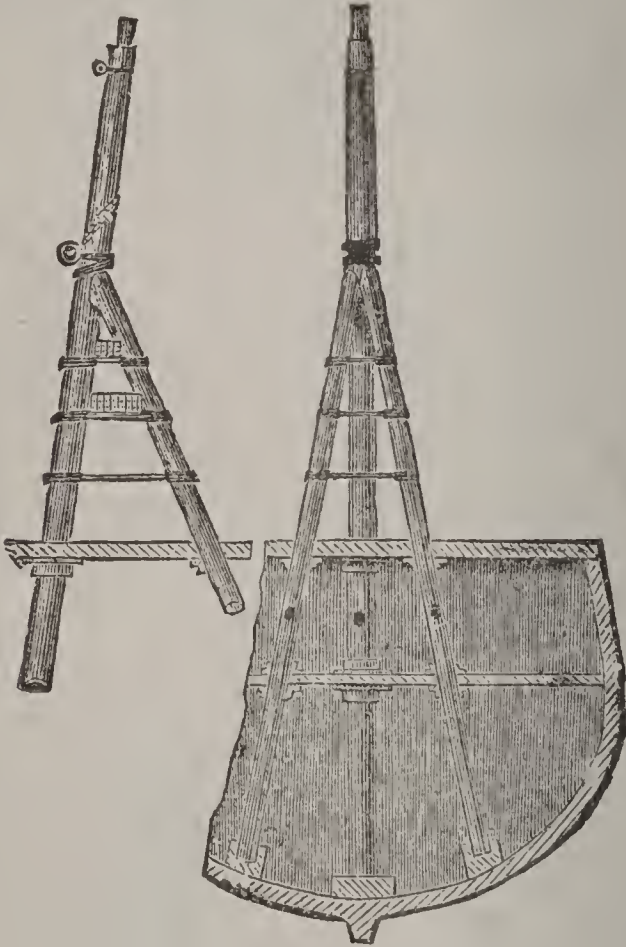
Architectural Mask.



Meander.

MAST.

for the cabins. From that time, iron has been frequently employed for lower masts, in sailing-ships as well as in steamers. The plan has usually been to make them of plates bent to the proper curvature, jointed by internal strips, and strengthened by an internal cross flange of plates secured by angle-irons; but sometimes the plates are lapped. The plates vary from $\frac{3}{8}$ to $\frac{5}{8}$ inch in thickness. Grantham (*Iron-shipbuilding*) states that iron masts are 'lighter and stronger than timber masts; and when compared with the built-up masts of large vessels, are rather less expensive. For vessels of the same tonnage, the difference of weight is nearly two to three in favor of iron.'



Tripod Masts of Iron.

Iron is used for yards as well as masts. An iron yard was made 1847 for the Australian clipper-ship *Schomberg*, 112 ft. long, and varying in diameter from 14 to 28 inches; it weighed $7\frac{1}{2}$ tons. It was calculated that a timber yard of the same size would weigh $12\frac{1}{2}$ tons. Iron masts have since been employed in many ships in the British navy, made of three vertical ranges of plates bent to the required curvature, with butt joints, and riveted to three T-irons which cover the joints on the inside.

Cap. Cowper Coles (drowned in the *Captain*, a martyr to his own inventiveness, 1870), inventor of the turret system for ships of war, introduced tripod iron masts. The real M. is strengthened and upheld by two others, the three forming a tripod. The central tube, or real M.

MASTER.

is carried up to form the topmast: while the side tubes are carried up only to the height of the lower yard. The main tube rests upon the keelson; while the side tubes, which are on either side of it and behind it, rest upon parts of the bottom-framing; but all three are fastened to the deck as they pass through. The lower M. only forms the tripod, and is self-supporting, without shrouds, etc.; the topmast is secured with stays, backstays, and out-riggers.

Since the use of steel in shipbuilding has become recognized, its use for masts has engaged attention: steel plates can now be made almost as easily as plates of iron; and it becomes a question of increased efficiency against increased cost as to which metal shall be adopted. Steel being a stronger metal than iron, masts of equal strength would weigh less if of steel than of iron. The hitherto not altogether unfounded distrust of steel in the present state of its manufacture, has hindered its rapid adoption. Great recent improvements in the manufacture of steel have largely removed the distrust of it, and since 1880 its use for the various purposes of shipbuilding has enormously increased.

MASTER, n. *mâs'têr* [OF. *maistre*—from L. *magistrum*, a master or chief: It. *maestro*; F. *maître*, a master]: a man who has rule or government over others; a lord; a ruler; a chief; the head of a household; a director; an owner; a possessor, with power of using; one very skilful in anything; one uncontrolled; a teacher or instructor; an employer; the commander of a merchant ship; officer in a ship of war (see MASTER, below): title of address to a young gentleman; title of dignity in the universities, as *Master* of Arts: V. to subdue; to conquer; to bring under control; to overcome; to excel in anything. MAS'TERING, imp. MASTERED, pp. *măs'têrd*. MAS'TERFUL, a. *-têr-fûl*, imperious; employing violence. MAS'TERLESS, a. *-lêś*, without a master. MAS'TERLY, a. *-lî*, done with the skill of a master; most excellent: AD. with the skill of a master. MAS'TERY, n. *-î*, rule; superiority; victory; eminent skill. MAS'TERSHIP, n. the office of a master, as of a college, etc.; dominion; rule; headship; in *OE.*, skill; knowledge. MASTER-BUILDER, the chief builder. MASTER-HAND, the hand of a man eminently skilful. MASTER-JOINTS, in *geol.*, a term applied to the large planes of division which pass through rock-masses, and which run regularly parallel to each other for considerable distances, the *smaller joints* traversing the rocks in all directions—among quarrymen the former are called *backs*, and the latter *cutters*. MASTER-KEY, a key that opens many locks. MASTER-MIND, a strong ruling or superior mind. MASTER-PASSION, a predominant passion. MASTERPIECE, a capital or excellent performance; anything done or made with superior excellence; chief excellence. MASTER-SINGERS (see MINNE-SINGERS). MASTER-STROKE, an act or performance which excels in ability and skill. MASTER-WORK, the work or performance that excels all others. TO BE MASTER OF

MASTER—MASTER-AT-ARMS.

ONE'S SELF, to have entire self-control; not to be governed by passion. *Note*.—**MASTER**, as a prefix, is placed before the Christian name and surname of a man, and is then contracted into *Mr.*, and pronounced *mās'tér*, used as a title of courtesy and respect, theoretically inferior to *esquire*; but of late years used frequently as a substitute for, or even as preferred to, *esquire*. **MASTER**, written in full, and pronounced *mās'tér*, is placed before the names of boys and youths as a mark of courtesy. The eldest son of a baron in the Scotch peerage is usually known by the title 'the Master of —,' prefixed to his father's title of peerage. **SYN.** of 'master, n.': leader; adept; governor; proprietor; manager; commander; captain; teacher; tutor; instructor; preceptor;—of 'mastery': skill; dominion; pre-eminence; dexterity; power; command; supremacy.

MASTER, in the United States Navy: line-officer next below a lieutenant. His duties are important, usually including those of officer of the deck, and those of ordnance officer in charge of the battery, small arms, and magazine: also he occasionally acts as navigating officer or sailing-master. Formerly the last was his regular duty, whence his official name; but now the navigating of the ship is usually committed to the line-officer who ranks third on board.

In the British navy, **M.** was an officer ranking with, but junior to, lieutenants, and charged with the details of sailing the vessel, under the general orders of the captain. In recent years the title **M.** has been changed to 'navigating lieutenant:' the change of name carrying, in several particulars, an improved status. It is his duty to take charge of such of the ship's stores as are not under the paymaster; in short, he is the navigator and storekeeper for the vessel; as such, holding a most responsible and onerous position. For his assistants, he has the junior officers in his own department—the navigating sub-lieutenants, navigating midshipmen, and navigating cadets—and the ship's quartermasters.

In the merchant navy, the **M.** of a vessel, usually, by courtesy, denominated the captain, is the officer commanding her. His duties comprise the maintenance of discipline, the sailing of the ship, the charge of her cargo, and many other mercantile functions. His responsibilities to the ship's owners are settled by distinct agreement, applicable to the special case. Toward the public, however, many statutes determine his responsibility. In the merchant service of Britain, masters of vessels of a certain size are required to obtain certificates of qualification from the Board of Trade, and certificated masters are eligible for the **ROYAL NAVAL RESERVE** (q.v.), with rank of lieutenant.

MASTER-AT-ARMS: petty officer on board a ship-of-war, charged with the care and instruction in the use of small-arms, except as regards the marines. He is employed also in maintaining discipline, order, and cleanliness. His assistants are the 'ship's corporals.'

MASTERDOM—MASTER OF THE BUCKHOUNDS.

MASTERDOM, n. *mâs'tér-dŏm* [*master*, and *dom*]: in *OE.*, the state of a master; dominion; rule; chief authority.

MASTER IN CHANCERY: officer of a court to whom were referred all complicated suits, usually those involving the examination of long accounts; or upon whom certain duties in the course of an action were imposed such as to take testimony or to sell property. The M. exercised an almost independent jurisdiction in carrying out these references. When cases were referred to him for determination, his powers were those of a judge, and judgment was entered directly on his decision. In other cases the M. completed the duty delegated to him by sending a report stating the result of his inquiries to the court which appointed him; on this report a decree was made, based on his decision and investigation. Parties might appeal to the court from this report by filing exceptions or objections to it. When a cause had been referred to a M. it could not be withdrawn from him without an order from the court, and this would be made only on rare occasions, such as the incapacity of the M., on account of illness, to attend to the business of the case. The office of M. has been abolished in most of the states, but still exists in the United States courts. The duties of a M. are now performed usually by a referee.

MASTER OF ARTS (abbreviated M.A. or A.M.): literary degree conferred by universities or colleges; title next higher than Bachelor (q.v.), and granted in sequence to that when the regular course is followed. It is the highest in the faculty of Arts, but subordinate to that of Bachelor of Divinity. In the English universities, a Master becomes a Regent shortly after obtaining his degree, and thereby obtains the privilege of voting in congregation or convocation at Oxford, and in the senate at Cambridge; and in the Scotch universities, of becoming a member of the General Council.—See **DEGREE**.

MASTER OF COURT: in England, the chief officer under the judges, having the duty to attend the sittings of the courts during term, and make minutes of their proceedings. These officers also tax all the bills of costs of the parties arising out of the suits and matters before the courts. They are appointed by the chief judge of the court, and hold their offices for life during good-behavior. *Masters in Chancery* (q.v.) were similar officers in the court of chancery, but were abolished, and the duties are now performed partly by the judge, and partly by the registrars.

MASTER OF THE BUCKHOUNDS: officer in the master of the horse's department of the British royal household, who has the control of all matters relating to the royal hunts. A salary of £1,500 is attached to the office, which is regarded as one of considerable political importance: the incumbent goes out of office on a change of ministry.

MASTER OF THE ROLLS.

MASTER OF THE CEREMONIES: officer instituted at the court of England 1603, for the more honorable reception of ambassadors and persons of distinction. The same term was afterward extended beyond the court, by being applied first to Beau Nash, the famous 'Master of the Ceremonies,' or president of the amusements at Bath, and then to other persons exercising the same function in ordinary assemblies.

MASTER OF THE GREAT WARDROBE: officer at the court of England, who had, in former times, the superintendence of the royal wardrobe. The office existed from a very early period till 1782, and was considered a position of great honor: its duties are now transferred to the lord chamberlain.

MASTER OF THE HORSE: third great officer of the English court; having superintendence of the royal stables, and of all horses and breeds of horses belonging to the sovereign. He exercises authority over all the equerries and pages, grooms, coachmen, saddlers, and farriers, and has appointment and control of all artificers working for the royal stables. He has the privilege of making use of the royal horses, pages, and servants; and rides next to her majesty on all state occasions. The office is one of great antiquity, and is considered a position of great honor: salary £2,500 a year. The Master of the Horse is appointed during pleasure, by letters-patent; but his tenure of office depends on the existence of the political party in power.

MASTER OF THE HOUSEHOLD: officer under the treasurer, in the lord steward's department of the British royal household, whose specific duties consist in superintending the selection, qualification, and conduct of the household servants. The appointment is during pleasure, and is not dependent on political party. The salary is more than £1,100 per annum.

MASTER OF THE ROLLS: third in rank of the judges of the supreme court of judicature in England, next after the lord chancellor and the lord chief justice: he is one of the lords of appeal. Formerly the principal clerk of the chancery, he had charge of the records, including the register of grants, writs, and patents. Gradually he came to have judicial powers, and ultimately was the chief judge in chancery, and next the lord Chancellor. Meanwhile, his original function of keeping the records passed from him, but was restored 1838, with extensive powers: salary £6,000 a year. The Master of the Rolls has no longer the privilege of being eligible for a seat in the house of commons.

MASTER AND SERVANT.

MASTER AND SERVANT, in Law: employer and employed in the relation constituted by a contract to requite and to render service. In common language the terms are applied only to the relation known as domestic service; but they are capable of application, and are applied in law, to a great variety of departments in which bodily labor is hired. As the relation is constituted by a contract, it is plain that the servant's free consent is requisite. Being a mere contract, it may, like other contracts, be broken at will, subject only to the usual consequence, that the party in the wrong is liable to pay damages for the breach.

A servant is a person who by contract, is subject to the authority or control of another person in trade, business or occupation. In England servants were divided into three classes, menial servants or domestics, apprentices, agricultural laborers and agents. In the United States no such distinction exists between menial servants and other servants; servants of all kinds stand upon the same legal footing and in most cases the word servant, is synonymous with the word employee.

This relation between master and servant can arise only out of a contract express or implied between the master on the one hand and the servant on the other. As in all cases of contract, the contracting parties must be capable of making a valid contract, that is, neither must be under any legal disability; married women, infants, idiots, or lunatics can not enter into a contract for services, because in the eyes of the law they are incapable of making contracts, and all agreements made with persons who are thus disqualified are either absolutely void or are binding only on the one party at the option of the incapacitated party. In England an infant might make a contract of hiring and service that would bind him, if the contract were beneficial to him; but in the United States, it is necessary that both parties shall be of full age and not otherwise disqualified to make a valid contract.

The contract may be either oral or in writing except when the term of service is for a period longer than one year: then by statute in most of the states the contract is wholly void unless in writing. Generally where service is rendered by one party and accepted by another, the law presumes a contract of hiring, and an obligation to pay for the services arises on the part of the person accepting them. A distinction, however, is sometimes made between cases in which the services are rendered to strangers and those in which they are given to near relations. In most of the states no obligation to pay will be presumed between parent and child. A special contract must be proved to entitle the child to a recovery. A servant must have the requisite skill and capacity to perform the services which he undertakes, and is bound to obey the lawful orders of his master that are within the scope of his engagement; but he may not be dis-

charged for refusing to perform work not comprehended in his agreement.

A master is not bound to furnish medical aid or medicines to his servant, even if the illness be contracted by the servant in the course of his work or by an accident in the discharge of his duty. If, however, the master of his own volition secures medical attendance, he will be personally liable for the physician's bill, and it has been held that he may not deduct the charges from the wages of the servant. The master is bound to take proper care of his servant and not to expose him to any danger: he is under a legal obligation to use reasonable and ordinary care in providing the servant with safe and suitable machinery and implements for the performance of his work. The law does not deem the master an insurer of the servant's safety and freedom from danger in such cases, but obliges him to use such care and precaution as a man of reasonable prudence would do. If he does not use this required degree of care, and if the servant, not knowing of the defect in the materials furnished to him, is injured while using them, the master may be sued and damages may be recovered for the injuries. If the master does use sufficient care in providing materials, the servant is presumed to take on himself the ordinary risks incident to the business and the materials used, and he has no right of action against the master for injuries received by reason of any unknown defect or unforeseen danger or because he does not possess sufficient skill properly to use the appliances furnished him. If the servant is employed to do work involving peculiar danger or extraordinary risks, which he cannot be presumed to know or foresee, he must be informed about them or his master will be chargeable with negligence. If the servant knows of any defect in the machinery and continues in the service without objection after such knowledge, he is guilty of contributory negligence, and the master will not be liable if he sustains injuries: but if the servant is persuaded to remain, on the master's promise to amend the defect, he may recover if he is afterward injured. The master is bound to use reasonable care in procuring competent fellow-servants; if he does not, and the servant is injured by reason of some fault of a fellow-servant, the master will be chargeable with negligence, and liable for damages; if the master uses the proper amount of care in this respect, the servant is deemed to assume the risks of injuries from the acts of co-servants in the same common employment and cannot recover against the master. To constitute a fellow-servant, the servant must be under the same master, in the same common employment, and the servants must be of different grades. As to third parties, it is not essential to constitute the relation of master and servant, that there should be any contract between the parties or that any compensation should be expected by the party rendering the services; it is sufficient if the act is done by one party for another, with the knowledge

MASTER-SINGERS—MASTERWORT.

of the person sought to be charged as master or with his assent, express or implied, even though he has not requested the act to be done. As a general rule the master is responsible to third parties for the wrongful acts committed by his servant within the scope of his employment, and he may be responsible even though the servant exceeds or disregards his instructions. Whatever acts are reasonably incident to the occupation in which the servant is employed and are performed by him with a view to his master's business are within 'the scope of his employment.' The servant may exercise a certain amount of discretion and though in doing so he errs, the master will be responsible if the act was committed in the prosecution of his business, even though the act be wilful.

The test in determining the master's liability is not whether the act complained of is wilful, but whether it is within the scope of the servant's employment.

The contract of hiring may be terminated by the master before its expiration, for immoral conduct, wilful disobedience of orders, and gross incompetence to perform his duty; a habit of intoxication has been held to be sufficient cause. In such cases, the servant forfeits the wages for the period that he has served, and the effect is the same if he leaves the service before the end of the term without reasonable cause. If the servant is prevented from completing his contract by sickness, he may recover for the services actually rendered. If he is unjustly discharged, he may treat the contract as rescinded, and sue the master for damages for breach of contract; and in such an action he may recover the value of the services actually rendered by him. It is the duty of the servant when so discharged to endeavor to secure other employment in order to reduce the damages recoverable against his master. The master is under no legal obligation to give a testimonial of character to his servant. But if he does, he will be liable for any injury sustained by the servant, if what he says is proved to be untrue, unless he can show that he spoke without malice and had sufficient cause for what he said.—See **HIRING**.

MASTER-SINGERS: see **MINNESINGERS**.

MASTERWORT, *mâs'têr-wêrt* (*Peucedanum Ostruthium*): a perennial plant of nat. ord. *Umbelliferae*, having a stem one ft. to two ft. high, broad bi-ternate leaves, large flat umbels of whitish flowers, and flat, orbicular, broadly margined fruit. It is a native of n. Europe and the north part of N. America. Its root was formerly cultivated as a pot-herb, and held in great repute as a stomachic, sudorific, diuretic, etc.; its virtues being reckoned so many and great that it was called *divinum remedium*. It still retains a place in the medical practice of some countries of Europe, though, probably, it is nothing more than an aromatic stimulant. The root has a pungent taste, causes a flow of saliva, and a sensation of warmth in the mouth, and often affords relief in toothache.

MASTIC—MASTIFF.

MASTIO, n., or **MASTICH**, n. *mās'tik* [F. *mastic*—from L. and Gr. *masīchē*, an odoriferous gum from the mastic-tree: It. *maslice*]: species of gum-resin yielded by the Mastic or Lentisk tree (*Pistacia lentiscus*, natural order *Terebinthaceæ*). It oozes from cuts made in the bark, and hardens on the stem in small round, tear-like lumps of a straw-color, or, if not collected in time, it falls on the ground; in the latter state, it acquires some impurities, and is consequently less valuable. The chief use of this gum-resin is in making the almost colorless varnish for varnishing prints, maps, drawings, etc. It is used also by dentists for stopping hollow teeth, and was formerly used in medicine. It is imported in small quantities, chiefly from the Morocco coast, but some is occasionally brought from the s. of Europe.—The name M. is given also to oleaginous cements or plaster for covering walls, composed of about 7 parts of litharge and 93 of burned clay, reduced to fine powder, made into a paste with linseed oil. **MASTICINE**, or **MASTICIN**, n. *mās'tī'sin*, the portion of mastic insoluble in alcohol.

MASTICADOR, n. *mās-tī-kā'dér* [Sp. *mastigador*—from L. *mastico*, I chew]: part of a bridle; a slaving bit.

MASTICATE, v. *mās'tī'kāt* [L. *masticātus*, masticated: Gr. *mastax* or *mastākā*, the jaw]: to chew as food; to grind food with the teeth, thus preparing it for swallowing and digestion. **MASTICATING**, imp. **MASTICATED**, pp.: **ADJ.** chewed. **MASTICATOR**, n. *-kā'tér*, a kneading-trough for India-rubber or gutta-percha. **MASTICABLE**, a. *mās'tī-kā-bl*, that can be chewed. **MASTICATION**, n. *-kā'shūn*, the act of chewing solid food. **MASTICATORY**, a. *mās'tī-kā'lér-ī*, adapted for chewing: **N.** a substance to be chewed to increase the saliva.

MASTICOT, n. *mās'tī-kōt*: see **MASSICOT**.

MASTIFF, n. *mās'tif* [OF. *mestif*, mongrel: It. *mastine*; Sp. *mastin*, a mastiff: Venet. *mastino*, large-limbed: prov. Eng. *masty*, very large and big: comp. Gael, *madadh*, a large dog]: large and strong dog, of which one variety has been known from ancient times as peculiarly English, and another is found in Tibet. No kind of domestic dog has more appearance of being a distinct species than this, and it shows little inclination to mix with other races, though the English M. has been in part crossed with the stag-hound and blood-hound. The **ENGLISH M.** is large and powerful, with large head, broad muzzle, large, thick, pendulous lips, hanging ears of moderate size, smooth hair, and a full but not bushy tail. It is generally 25 to 23 inches high at the shoulder, but a greater size is sometimes attained. The M. is very courageous, and does not flee even from the lion, for which three or four of these dogs are said to be a match. The Gauls trained British mastiffs, and employed them in their wars. The M. is now valued chiefly as a watch-dog, for which no dog excels it; and while it faithfully protects the property intrusted to it, it has the addi-

MASTITIS—MASULIPATAM.

tional merit of refraining from any great injury of the invader. It becomes much attached to its master, though not very demonstratively affectionate; it is excelled by many kinds of dog in sagacity. The English M. is usually of some shade of buff color, with dark muzzle and ears. The ancient English breed was brindled yellow and black.—The M. of TIBET is larger than the English; the head is more elevated at the back; the skin, from the eyebrow, forms a fold which descends on the hanging lip; the hair is very rough, and the tail bushy; color mostly a deep black.

MASTITIS, n. *mās-tī'tis* [Gr. *mastos*, an udder, a breast; and *itis*, denoting inflammation]: in *med.*, inflammation of the breast.

MASTLIN, n. *māst'lin*: see **MASLIN**.

MASTODON, n. *mās'tō-dōn* [Gr. *mastos*, a breast or nipple; *odous* or *odontu*, a tooth]: in *geol.*, a genus of Tertiary and post-Tertiary elephantine mammals—so called from the nipple-like protuberances on the grinding surfaces of their teeth. They are nearly allied to the elephant, but with simpler grinding teeth, adapted for bruising coarser vegetable substances, or perhaps fitted for an animal of a more omnivorous character than its modern representative. The M. is distinguished from the elephant only by the teeth, and the variations in these are gradations so numerous and almost imperceptible as to indicate that the distinction between the two is really arbitrary, though convenient. Eleven or twelve species have been described from the Miocene, Pleiocene, and Pleistocene strata in Europe, Asia, and America: in Asia and Europe, in the Miocene and Pleiocene; in America, in the Pleiocene and Pleistocene. The range in N. America was from Canada to Texas: probably the most complete skeleton was found at Newburgh, N. Y., 1845. It is now in Boston, and is 11 ft. high and 17 ft. long, with tail ad ling 6 ft. 8 in., and tusks projecting 8 ft. 8 in. About 30 species are described (see Dr. J. C. Warren, *The Mastodon Giganteus of N. America*, 2d ed. 4to, Boston 1855. The S. American M. was similar.

MASTODYNIA, n. *mās'tō-dīn'ī-ă* [G. *mastos*, breast; *odynē*, pain]: in *med.*, pain of the breast.

MASTOID, a. *mās'toyd* [Gr. *mastos*, a breast; *eidōs*, appearance]: nipple-like; teat-like.

MASTOLOGY, n. *mās-tōl'ō-jī* [Gr. *mastos*, a breast; *logos*, discourse]: that branch of zoology which treats of animals that suckle their young.

MASTURBATION, n. *mās'tēr-bā'shūn* [L. *manus*, hand; *stuprātiōnem*, defilement]: self-pollution; onanism.

MASULIPATAM, *mā-sō-lē-pa-tām'*, called also **KISTNA**, *kīst'na*, or **KRISHNA**, *krīsh'na*: maritime district of British India, in the govt. of Madras; 8,471 sq. m., pop. (1881) 1,548,480. Along the shore to a distance of 40 or 50 m. inland, the surface is exceedingly low, lower in some places than the shore itself and the beds of the Kistnah.

and the Godavery, the chief rivers.—The chief town, MASULIPATAM or *Bandar*, on a wide bay, is decaying of late. The people weave cotton. The storm wave of 1864 swept over the entire town, and destroyed 30,000 lives here; pop. of town (1881) 35,056.

MAT, n. *măt* [L. *matta*, a mat of rushes and the like: F. *natte*; Ger. *matte*, a mat, properly a bunch or tuft of rushes or the like: Sp. *mata*, a bush]: a thick texture formed by weaving or plaiting together rushes, straw, rope-yarn, or other substances, laid at the entrance of a house or apartment, that the boots or shoes of those about to enter may be cleaned or rubbed on it; an article woven or plaited of straw, etc., for putting beneath dishes at table; a fancy article of worsted or other material to put beneath a drawing-room ornament: V. to twist together or interweave like a mat; to felt or entangle; to grow thick together. MAT'TING, imp.: N. a thick texture formed of straw, rope, jute, and the like, used for purposes of cleanliness, for packing, and for covering the floors of houses. MAT'TED, pp.: ADJ. laid with mats; entangled.

MATABELE: Kafir people, speaking one of the Bantu tongues, whose territory lies between the Zambesi and Limpopo rivers in s.e. Africa. See *M. Land*, by Oates (1881).

MATADORE, or MATADOR, n. *măl'ă-dôr'* [Sp. *matador*, slayer—from *matar*, to kill—from L. *mactārē*, to honor by sacrifice, to kill]: one of the three principal cards at ombre and quadrille: in *Sp bull-fights*, he who is appointed to kill the disabled bull: see BULL-FIGHT.

MATAGORDA, *măt-a-guwr'da*: seaport in Texas, Matagorda co., on the Gulf of Mexico, at the mouth of the Colorado river, 80 m. w.s.w. of Galveston. It is an important outlet of a country rich in cotton, sugar, rice, etc. Pop. 2,000.

MATAGORDA ISLAND: long sandy island between the Gulf of Mexico and Espiritu Bay. A light-house with a flash-light is at its n. end near Pass Cavallo.

MATAMORAS, *măt-a-mō'ras*, or MATAMOROS, *mă-ta-mō-rōs*: river-port of Mexico, dept. of Tamaulipas, on the s. bank of the Rio Grande, 40 m. from the mouth of that river in the Gulf of Mexico. The chief exports are specie, hides, wool, and horses; chief imports, manufactured goods from the United States and Great Britain. It is opposite Brownsville, in Texas, with which there is extensive trade and much smuggling. Pop. 20,000.

MATAMOROS, *mă-ta-mō'rōs*, MARIANO: Mexican patriot and revolutionary leader; one of three priests, Hidalgo, Morelos, and M., who conducted, and perished in, the earliest insurrection of Mexico against Spanish rule. After the first revolt under Don Miguel Hidalgo 1810, and his defeat and execution 1811, Morelos took up the struggle, and maintained it until he met the same fate 1815. In 1811 M., parish priest of Jantelolco, small vill.

MATANZAS—MATCH.

s. of the City of Mexico, joined the insurgents under Morelos, was made a col., and at once showed great military talent. In the defense of Cuautla, against Gen. Calleja, where Morelos had defeated the Spaniards with great loss 1812, Feb. 19, and they had with a fresh army besieged him for several weeks, the glory of a masterly escape May 2 was more that of M. than that of Morelos. In an expedition to Oaxaca M. was conspicuous, and 1813, Oct., he won the victory of San Augustin del Palmar. The success of the revolution seemed now assured, except in a few of the larger cities, until Morelos rashly, against M.'s judgment, risked an attack on the cap. of Michoacan (Valladolid, now Morelia), and met severe defeat from Iturbide. M. collected his forces at Puruaran, and Morelos again rashly precipitating an action, M. was taken prisoner, and a few days later was shot at Valladolid 1814, Feb. 13. Morelos met a similar fate the next year. Alaman, in his *Hist. of Mexico*, describes M. as the most able military leader of the first revolution. In the cathedral of Mexico the remains of the three priest-soldiers who gave their lives in the founding of Mexican liberty, rest in honor together. In honor of M. are named the city of Matamoros on the Rio Grande, and other towns.

MATANZAS, *ma-tăn'zas* or *mâ-tân'ihâs*: fortified town and seaport on the n. coast of the island of Cuba, 55 m. e. of Havana, with which it is connected by railway. It is in an exceedingly rich and fertile district, has a good harbor, and after Havana it is the most important trading-place on the island. During the SPANISH-AMERICAN WAR (q. v.) M. was subjected to bombardment by the U. S. warships *New York*, *Puritan*, and *Cincinnati* (1898, Apr. 27), and the forts were silenced, also in May when the *New York*, the *Dupont*, and the *Hornet* destroyed several blockhouses. Pop. (1887) 87,760; (1902) 36,374.

MATAPAN, *mâ-tâ-pân'*, CAPE: southernmost point of the Morea in Greece, lat. 26° 33' n.: see CAPE MATAPAN.

MATARO, *mâ-tâ-rô'*: flourishing Mediterranean seaport of Spain, province of Barcelona, 21 m. n.e. of Barcelona. There are here cotton-spinning mills, linen and wooler mills, sailcloth factories, tanneries, and several iron-foundries. Its harbor has docks for ship-building. Pop. 17,500.

MATCH, n. *mäch* [AS. *maca*, a companion: Icel. *maki*, a spouse: Norw. *makje*, a mate]: one equal to another in strength or in some other quality; anything that equals another or tallies with it; a contest; a game; union by marriage; one about to be married: V. to oppose or set against as equal; to suit; to give in marriage; to marry; to tally. MATCH'ING, imp. MATCHED, pp. *mächt*. MATCH'ABLE, *-a-bl*, that can be joined or compared; suitable; equal. MATCH'ER, n. *-ér*, one who matches. MATCH'LESS, a. *-lës*, having no equal. MATCH'LESSLY, ad. *-lÿ*. MATCH'LESSNESS, n. *-nës*, the state or quality of being without an equal. MATCH-MAKER, one who endeavors to effect unions by marriage.

MATCH—MATCHES.

MATCH, n. *mäch* [OF. *mesche* and *meiche*; F. *mèche*, the wick or snuff of a candle—from mid. L. *myxa*, the wick of a candle or lamp: Gr. *muxa*, the snuff or suivel of the nose; comp. Gael. *maide*, a stick]: anything that readily takes fire, and is capable of setting fire to, or giving light; a slender piece of wood or piece of twisted fibre for igniting a candle or lamp; a lucifer. **MATCH-LOCK**, the old musket which was fired by a match (see **LOCK**, of a Gun). **MATCH-MAKER**, one who makes or manufactures matches for burning. **QUICK-MATCH**, a match made of such materials as burn quickly, as cotton-wick steeped in gummed whisky or brandy, and covered with a preparation of meal. **SLOW-MATCH**, a match for burning slowly.

MATCHES: small thin pieces of various inflammable materials prepared for the purpose of obtaining fire readily. One of the first forms of this useful article was the brimstone match, made by cutting very thin strips of highly resinous or very dry pine-wood, about six inches long, with pointed ends dipped in melted sulphur; thus prepared the sulphur points instantly ignited when applied to a spark obtained by striking fire into tinder from a flint and steel. This was in almost universal use till about 1825, when it was displaced by several ingenious inventions in rapid succession. The first of these was the 'Instantaneous-light Box,' a small tin box containing a bottle, in which was some sulphuric acid with sufficient fibrous asbestos to soak it up and prevent its spilling out of the bottle, and a supply of properly prepared matches. These consisted of small splints of wood about two inches long, one end of which was dipped first into melted sulphur, and afterward into a paste of prepared chemical mixture. They were readily inflamed by dipping the prepared ends into the bottle of sulphuric acid. In this ingenious invention the arrangement was inconvenient and the acid soon lost its power. The Lucifer match succeeded it: the M. were small strips of pasteboard or wood, and the inflammable mixture was a compound of chlorate of potash and sulphuret of antimony, with enough of powdered gum to render it adhesive when mixed with water, and applied over the end of the match, dipped as before in melted brimstone. These M. were ignited by the friction caused by drawing them between the folds of a piece of folded sand-paper. So popular did these become, that their name has been popularly applied to other kinds since invented. Afterward was the Congreve, a modification of which is still commonly used. The body of the match is usually of wood; but some, called Vestas, are of very thin wax-taper. The composition consists of phosphorus and nitre, or phosphorus, sulphur, and chlorate of potash, mixed with melted gum or glue, and colored with vermilion, red-lead, umber, soot, or other coloring material. The proportions are almost as varied as the manufacturers are numerous. **Amadou**, or German tinder, is largely made into **Cong**

MATCHES.

greve M. or fusees, as they are often called, for lighting pipes or cigars. One of the latest and best introductions is properly called the 'Special Safety Match.' With every variety of Lucifer and Congreve, there are dangers attending the use; for both ignite by a slight friction, and have doubtless been the cause of numerous disastrous fires. The phosphorus in the Congreves adds the danger of spontaneous ignition if the temperature is a little higher than ordinary. The safety match was invented in Sweden, by Lundstrom, manufacturer of M. at Jönköping, 1855 or 6. There is no phosphorus in the safety match itself; instead, the other elements in the match are brought into contact with the phosphorus (*red phosphorus*) only on the friction-surface provided on the match-box, which surface contains also sulphide of antimony. In spite of this precaution, safety M. will, with sharp friction, light on smooth paper, wood, dry glass, and other substances; but they light *readily*, 'only on their own box.' *Fusees* and *Vesuvians* are M. expressly designed for lighting pipes and cigars.

Many ingenious inventions have been introduced for making the wooden splints. The square ones, usually considered the best, are cut very simply by two sets of knives acting transversely to each other. The round ones are cut by a perforated steel plate invented 1842. The perforations are the same size as the splints; and their edges are sufficiently sharp, when pressed on the transverse section of the wood, to cut down through it. The various ornamental forms of the German match-makers, who excel in this manufacture, are produced by planes, the irons of which are so constructed as to plow up splints of the form required. These are usually made of a soft kind of pine-wood—that of *Abies pectinata* is preferred in Austria and Germany—of which vast quantities are yielded by the forests of Upper Austria. Until the introduction of amorphous phosphorus (see PHOSPHORUS), the trade of match-making was fearfully unhealthful; the emanation of phosphoric acid, when common phosphorus was used, gave rise to necrosis, or mortification of the bones, and fatal effects often followed. Some manufacturers are still using the common kind for cheapness. This abuse demands legislative interference.

The trade in M. has assumed enormous dimensions in Germany and Austria, one of the largest manufactories being at Schüttenhofen in Bohemia. From Sweden 19 millions lbs. were shipped 1880, and one Swedish firm employs nearly 900 hands. More than one firm in England produces ten million Congreve matches per day; and a Birmingham firm manufactures daily eight miles of thin wax-taper, and converts it into Congreve matches. In England and France together, about 250,000 millions a year are turned out. In the United States, about 40,000 millions were made several years ago; the manufacture has much extended since. Some recent kinds of matches contain no phosphorus either on the match or on the striking surface,

MATE—MATÉ.

MATE, n. *māt* [Icel. *mati*, an equal, a fellow: Dut. *maat*, a comrade. OHG. *gamazi*, a table-companion—from OHG. *maz*; Icel. *matr*, food: said also to be allied to *meet*, measured, suitable, equal]: a companion; an associate; one who associates with another and eats at the same table, sails in the same ship, or is employed at the same place; an officer of a merchant-ship next the master or captain (see below): a husband or wife; the male or female of two animals which associate for the propagation of their species: V. to match to marry; to equal, or be equal to. **MA'TING**, imp. **MA'TED**, pp. **MATE'LESS**, a. -*lēś*, having no mate or companion. **PLAYMATE**, a young person companion to another in recreations or amusements.

MATE, n. *māt* [F. *mat*, subdued: Dut. *mat*, overcome: Sp. *mate*, faded: Pers. *sháh-mât*, the king is dead: Ar. *mûta*, he died]: in the game of chess, the state of the king when he cannot escape, called **CHECK-MATE**: see under **CHECK**.

MATE: nautical officer. In the U. S. navy, a mate is a line-officer not in the line of promotion; he holds his position by appointment, messes in the steerage, and does such duty as the commanding officer prescribes. The term is also applied to the assistant of the boatswain, gunner, armorer, etc. The term was formerly applied to a grade between lieutenant and midshipman, now known in the U. S. navy as the junior grade; in the Brit. navy the title is now changed to **SUB LIEUTENANT** (q. v.)

In the merchant service the first or chief mate is next in rank to the master, and takes command of the ship in case of the absence, disability, or death of the latter; he is not removable by the master except for cause. The second mate commands the starboard watch, leads the crew in reefing, etc. Large merchantmen have sometimes a third, or even a fourth mate.

MATÉ, *mâ-tā'*, or **PARAGUAY TEA**, *pă-r-a-gwā* or *pâ-râ-gwî*: substitute for tea, used extensively in S. America, and almost universally in Brazil. It consists of the leaves and green shoots of certain species of Holly (q. v.), more especially *Ilex Paraguayensis*, dried and roughly ground; the leafy portion being reduced to a coarse powder, and the twigs being in a more or less broken state, sometimes, however, as much as an inch in length. The term *maté*, which has by usage attached to this material, belonged originally to the vessels in which it was infused for drinking; these were usually made of gourds or calabashes, often trained into curious forms during their growth. Into the hollow vessels thus formed, a small quantity of the material, properly called *Yerba de Maté*, is put, and boiling water is added; it is then handed round to those who are to partake of it; and each being provided with a small tube about eight inches in length, with a small bulb at one end, made either of basket-work of wonderful fineness, or of perforated metal, to act as a strainer, and prevent the fine particles from being drawn up into the mouth, dips in this instrument, which is

MATER—MATERIAL.

called a *bombilla*, and sucks up a small portion of the infusion, and passes the maté-bowl on to the next person. It is usual to drink it exceedingly hot, so much so as to be extremely unpleasant to Europeans. Its effect is much the same as tea, stimulating and restorative, having a large proportion of the principle *theine* found in tea and coffee. The collection and preparation of M. is a large industrial occupation in Paraguay and Brazil; and not only *Ilex Paraguayensis*, but also *I. curitibensis*, *I. gigantea*, *I. ovalifolia*, *I. Humboldtiana*, and *I. nigropunctata*, besides several varieties of these species, are in general use. It is remarkable that when caffeic acid, to which coffee owes its agreeable flavor, independently of the theine, is treated with sulphuric acid and binoxide of manganese, it forms kinone; and by treating the M. with the same agents, kinone has also been obtained. More than 5,000,000 lbs. of M. are annually exported from Paraguay to other parts of S. America; but it is not yet an article of export to other quarters of the world.

Ilex Paraguayensis is a large shrub or small tree; with smooth, wedge-shaped, remotely serrated leaves, and umbels of small flowers in the axils of the leaves. The leaves of many species of holly possess properties very different from those of the M. trees. Some are emetic.

MATER, n. *mā'ter* [L. *māter*; Gr. *mētēr*, a mother]: a name given to two of the membranes which cover the brain, called respectively the *dura-mater* and *pia-mater*—so named because formerly supposed to be the source of all other membranes. ALMA-MATER, the university at which one has studied.

MATERA, *mâ-tā'râ*: city of the Italian province Potenza, between lovely valleys, 37 m. w.n.w. of Taranto. It has an episcopal palace, a cathedral, and a college, but its lower classes are reputed the most uncivilized of s. Italy; they dwell chiefly in ancient caverns, excavated in the side of the deep valley surrounding the town, and are much afflicted with cretinism. M. has manufactures of leather and arms, and a trade in nitre and agricultural produce. Pop. 15,225.

MATERFAMILIAS, n. *mā'tēr-fā-mīl'ī-ās* [L.—from *mā'tēr*, a mother; *famīliā*, a household, a family, *famīliās*, of a family]: the familiar name of a female-parent or mistress of a family—the father being called *paterfamilias*.

MATERIAL, a. *mā'tē'rī-āl* [F. *matériel*—from L. *materiālis*, belonging to matter—from *materiā*, matter: It. *materiale*]: consisting of matter; not spiritual; corporeal; important; essential; not merely formal; substantial: N. anything composed of matter; that of which anything is made. MATE'RIALLY, ad. *-lī*, in the state of matter; importantly; essentially. MATE'RIALNESS, n. *-nēs*, the state of being material. MATE'RIAL'ITY, n. *-āl'ī-tī* [F. *mat'rialit*]: material existence; not spirituality. MATERIALIZE, v. *mā-tē'rī-āl-īz*, to render material; to reduce to matter, or to regard as such; to have a tendency toward materialism. MATE'RIALIZING, imp.:

MATERIAL CAUSE—MATERIALISM.

having a tendency toward materialism. **MATE'RIALIZED**, pp. -īz'd. **MATE'RIALIST**, n. -īst, one who maintains that the soul of man, and even all existence and consciousness, is but the result of a particular organization of the matter of which the body is composed. **MATE'RIALISM**, n. -āl-izm, the doctrine or belief of a materialist. **MATE'RIALIS'TIC**, a. -āl-īs'tik, having a tendency to materialism.—**SYN.** of 'material, a.': bodily; weighty; momentous.

MATE'RIAL CAUSE: term in logic, for the cause pertaining to the matter or essence of a thing rather than to its form; the first in Aristotle's classification of causes into four divisions: see **CAUSE**.

MATE'RIALISM: term in philosophy, variously defined; but comprehensively denoting that theory of the nature of mind, which regards it either as mere matter, or as a product of the material organization: 'that speculative theory which resolves all existence into a modification of matter.'—*Enc. Brit.* The opposite view is called **Spiritualism**, and means that the mind, though united with the body, is not essentially dependent on material organs, but may have an existence apart from these. There has been much controversy on this question; and though in later times the immateriality of the mind has been the favorite view, and has been found essential to the belief in the living God and in man's immortality; yet, in the earliest ages of the Christian Church, the materialistic view was considered the most in unison with revelation, being upheld doubtless in what then seemed a necessary resistance to the excessive spiritualizing tendencies of the Platonic schools. Thus Tertullian contended that the Scriptures prove, in opposition to Plato, that the soul has a beginning, and is corporeal: he ascribes to it a peculiar character or constitution, and even boundary, length, breadth, height, and figure. (This last view is incompatible with the definition of mind: see **MIND**.) To Tertullian incorporeity was another name for nonentity (*nihil est incorporale, nisi quod non est*); and he extended the same principle to the Deity, who, he conceived, must have a body. He could not comprehend either the action of outward things on the mind, or the power of the mind to originate movements in outward things, unless it were corporeal.

Our present knowledge shows us more and more the intimacy of the alliance between our mental functions and our bodily organization. It is claimed that feeling, will, and thought are in all cases accompanied with physical changes; and it may be granted at least that no valid exception to this rule has ever been established. Mind, therefore so far as known to us, in its association with bodily life, has its place and its activity in intimate conjunction with a series of material organs, though it is totally unlike, and even in fundamental contrast to, any properties or functions known as material—extension, inertia, color, etc. We never can resolve mind into matter; that would be a confounding of the greatest con-

MATHEMATICAL INSTRUMENTS.

trast that exists in the entire compass of our knowledge (see MIND); yet we see the two closely united within the sphere of the animal kingdom. 'Our consciousness in this life is an *embodied* consciousness. Human Understanding and Belief are related, in a variety of ways, to the original and successive states of the bodily organism from birth to death. Observation and experiment prove the important practical fact, that the conscious life on earth of every individual is dependent on his organism and its history.' (Professor Fraser's *Rational Philosophy*). See MATTER: MIND: PERCEPTION: CONSCIOUSNESS: INTELLECT: EMOTION: WILL: IMMORTALITY: GOD: ATHEISM: PANTHEISM: LEIBNITZ, GOTTFRIED WILHELM VON: see also Lange's able *Geschichte des Materialismus* (Eng. transl. 1877).

MATERIA MEDICA, n. *mă-tě'rĩ-ă mēl'i-lă* [L. *materiă*, substance; *medica*, medical]: department of the science of medicine which treats of the substances natural or artificial employed for alleviation and cure of disease. Some writers, e.g., Pereira, divide the subject into the inorganic and the organic; others, e.g., Christison, adopt an alphabetical arrangement. In the description of an inorganic compound, e.g., iodide of potassium or calomel, the writer on materia medica notices (1), its physical properties; (2), its various modes of preparation; (3), its chemical composition and relations, including the tests for its purity, and the means of detecting its probable adulteration; (4), its physiological action on man and animals in large and small doses; (5), its therapeutic actions and uses, and the average doses in which it should be prescribed; and (6), the officinal preparations containing the substance in question, and their uses and doses: while the notice of an article belonging to the organic department must treat also of the natural history of the source whence it is obtained, and the mode of collecting or extracting it: see MEDICINAL PLANTS.

MATÉRIEL, n. *ma-tă'rĩ-ěł* [F]: that which, in a complex system, constitutes the articles, or instruments employed, as distinguished from the *personnel*, or men employed: thus the baggage, arms, provisions, etc., of an army.

MATERNAL, a. *mă-tě'r'năl* [F. *maternel*—from L. *maternālis*—from *maternus*, belonging to a mother—from *māter*: Gr. *mētēr*, a mother: It. *materno*]: pertaining to a mother; befitting a mother; motherly. MATER'NALLY, ad. -lī. MATERNITY, n. *mă-tě'r'nĩ-lĩ* [F. *maternité*]: the character or relationship of a mother.

MATH, n. *măth* [AS. *mædh*, a mowing—from *mawan*, to mow]: a mowing; a crop, as in *aftermath*.

MATHEMATICAL INSTRUMENTS: all instruments employed in the determination of the length of lines or the size of angles. Pairs of compasses, surveying-chains, etc., are examples of the former class; while the compass, sextant, theodolite, and the numerous list of astronomical instruments generally denominated tele-

MATHEMATICIANS—MATHEMATICS.

scopes, including the equatorial, transit instrument, mural circle, etc., are of the latter class. For the more important of these instruments, see their titles.

MATHEMATICIANS: name given by the Romans to the professors of astrology, from the fact that, in all cases, those who practiced astrology also to some extent cultivated mathematical science. The Romans, unlike the Greeks, appeared not to comprehend the attractions possessed by mathematical studies: being consequently unable to distinguish between the student of pure science and the fanatic enthusiast who attempted to derive a knowledge of future events on this earth from the position of the stars, they joined them together in a common condemnation, under the name of 'mathematici.'

MATHEMATICS, n. plu. *măth'ĕ-măl'iks* [L. *mathemat'ica*: Gr. *mathemat'ikē*, mathematical science, connected with *manthānō*, I learn: F. *mathématiques*, mathematics]: science which treats of whatever can be measured or numbered, embracing the departments of arithmetic, geometry, and analysis, or algebraic reasoning, with their subdivisions (see below). **MATH'EMAT'ICAL**, a. *-măl'i-kăl*, or **MATH'EMAT'IC**, a. *-ĭk*, pert. to mathematics; according to, or done by, mathematics; demonstrative. **MATH'EMAT'ICALLY**, ad. *-lĭ*. **MATH'EMAT'ICIAN**, n. *-mă-lĭsh'ăn*, one who is skilled in mathematics (see **MATHEMATICIANS**, above). **PURE MATHEMATICS** considers quantity and number without reference to matter. **MIXED MATHEMATICS** treats of magnitudes as subsisting in material bodies (see **MATHEMATICS**, below). **MATHEMATICAL PROOF**, a proof from principles as exact as in a mathematical demonstration.

MATHEMATICS: science which has for its subject-matter the properties of magnitude and number. It is usually divided into *pure* and *mixed*: pure including all deductions from the abstract, self-evident relations of magnitude and number; mixed, the results arrived at by applying the principles so established to certain relations observed among the phenomena of nature. The branches of pure mathematics which were first developed were, naturally, *Arithmetic*, or the science of number, and *Geometry*, or the science of quantity (in extension). The latter of these was the only branch of mathematics cultivated by the Greeks, their cumbrous notation opposing a barrier to any effective progress in the former science. Algebra (q.v.), or the science of numbers in its most general form, is of much later growth, and was at first merely a kind of universal arithmetic, general symbols taking the place of numbers; but its extraordinary development within the last two centuries has given it a place as a distinct science, the *science of operations*. Combinations of these three have given rise to *Trigonometry* (q.v.) and *Analytical Geometry*. The *Differential and Integral Calculus* (q.v.) makes use of the operations or processes of geometry, algebra, and analysis indifferently; the *calculus of finite differences* is in part included

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under algebra, and may be considered as an extension of that science; and the *calculus of variations* is based on the differential calculus. The term 'mixed mathematics' is liable to lead to error; 'applied mathematics' is a more appropriate name. This portion of mathematics includes all those sciences in which a few simple axioms are mathematically shown to be sufficient for the deduction of the most important natural phenomena; it thus includes those sciences which treat of pressure, motion, light, heat, sound, electricity and magnetism—usually called *Physics*—and excludes chemistry, geology, political economy, and the other branches of science, which, however, receive more or less aid from mathematics. For a notice of the separate sciences, see **ASTRONOMY: OPTICS: MECHANICS: HYDROSTATICS: HYDRODYNAMICS: HEAT: ACOUSTICS: ELECTRICITY: MAGNETISM: ETC.**

MATHER, *măth'ér*, COTTON, D.D. : minister of the North Church (Congl.), Boston, in early colonial days : 1662, Feb. 12—1723, Feb. 13; b. Boston; eldest son of Increase M. and Maria Cotton. He entered Harvard College when 12 years old, and his precocity and piety excited great expectations. He entered upon a course of fasting and vigils, cured a habit of stammering by speaking with 'dilated deliberation,' studied theology, was ordained co-pastor with his father, and was pastor of the North Church, Boston, 1685–1728. He was a laborious pastor, an indefatigable preacher, an eminent philanthropist—both in his personal charities and in organizing a score of societies for public charity; and introduced at great personal risk, and against popular opposition, the preventive inoculation against small-pox in America. M. was a man of great learning, an author in English, French, Spanish, and Algonquin: 382 printed works by him are catalogued, of which several are large books; besides his great work in 6 vols. manuscript, *Biblia Americana*, not printed. M. was in correspondence at one time with more than 50 learned Europeans, and was made a fellow of the Royal Soc.—then a rare distinction. His *Essays to do Good* were highly commended by Benjamin Franklin. The phenomenon termed 'Salem Witchcraft' having appeared in the colony, he investigated it, and wrote, 1685, *Memorable Providences relating to Witchcraft and Possessions*; and 1692, *Wonders of the Invisible World*. M.'s enormous learning and diligent conscience were not equalled by his tact, delicacy, or sense. He was ambitious and opinionated; and made himself unfortunately prominent in the witchcraft delusion—a superstition which he shared with the age in which he lived. In all countries of Europe, and in various parties in the state and the church in England, this frightful delusion held sway: Richard Baxter justified it; Sir Matthew Hale, Lord Chief Justice of England, universally held to be the most acute and upright jurist of his times, sentenced women to be burned as witches. M.'s natural infirmities and his intemperate zeal, with his great prominence, caused him to be deeply entangled

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in this snare; which is now remembered against him as though it set him apart from all other men. Later—too late—he admitted ‘a going too far in that affair.’ M. died in Boston.

MATHER, INCREASE: minister of the North Church (Congl.), Boston, in early colonial days: 1639, Jan. 21—1723, Aug. 23; b. Dorchester, now a part of Boston; son of Richard M. (q.v.). He was educated at Harvard College, graduating 1656; and at Trinity College, Dublin. He was pastor of the Second (or North) Church, Boston, 1664–1723, almost 60 years; and for 17 years (1685–1701) pres. of Harvard College, for which he obtained the right to confer the degrees B.D. and D.D. An industrious student, he spent 16 hours a day in his study, and published 160 books or tracts, most of which are now very scarce. One of these, entitled *Remarkable Providences*, was republished in the Library of Old Authors (London 1856). His influence was so great in the colony, that he was sent to England 1688 to secure a new charter for the Mass. colony, and had the appointment of all the officers under it. He spent four years in this public service. He was regarded as the foremost minister of his time in America. M. married 1682 Maria, dau. of the Rev. John Cotton (q.v.).

MATHER, RICHARD, D.D.: one of the early settlers of New England: 1596–1669, Apr. 22; b. Lowton (Winwick), England; son of Thomas M. He studied at Oxford Univ., leaving to take charge of the church at Toxteth Park 1618. His Puritanism brought persecution, and he escaped in disguise, landing at Boston 1635, Aug. 17. He established the present First Church at Dorchester (a former church had emigrated in a body to Conn.), and was its pastor till his death. His youngest son, Increase M., was father of Cotton M. He acquired great repute as preacher, and as expounder and advocate of the New England way of church-order. M. was moderator of the council of churches whose result was the formation 1669 of the third church in Boston—the Old South Church.

MATHESES, n. *măth-ē'sīs* [Gr. *mathēsis*, learning]: learning; the doctrine of mathematics.

MATHEW, *măth'ū*, THEOBALD, commonly known as FATHER MATHEW: 1790, Oct. 10—1856, Dec. 8; b. Thomastown, Tipperary, Ireland; descended from an illegitimate branch of the Llandaff family. On the death of his father while M. was still very young, the kindness of the Llandaff family enabled the boy to enter the Rom. Cath. college of Kilkenny, whence he was transferred as a candidate for the priesthood to the college of Maynooth 1807. He left that college, however, in the next year, relinquished the secular priesthood for that of the religious order of the Capuchins, in which he took priest's orders 1814, and was sent to the church of his order in the city of Cork. His singular charity, benevolence, and gentleness, his simple and effective eloquence, and his faithful zeal won universal love and respect. But the

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great work of Father M.'s life is the marvellous reformation wrought by his eloquence and assiduity, which won for him the title APOSTLE OF TEMPERANCE. In 1838, he established in Cork an association on the principle of total abstinence, which in less than 9 months numbered 150,000 members in the city and adjacent districts. His success seemed almost supernatural; 100,000 persons are said to have signed the pledge in two days at Galway, 70,000 in five days at Dublin. The form of engagement partook of the religious, and was accompanied by the presentation of a medal, to which great reverence was attached by the recipient. His association included a large proportion of the adult population of Ireland, without distinction of rank, creed, or sex; and so complete was the revolution in the habits of the Irish people, that many distilleries and breweries ceased from working. Among the sufferers from this great moral revolution, were members of Father M.'s own family, who were largely engaged in the distilling trade. In 1844, he labored in Liverpool, Manchester, and London, with great success; and he spoke to great assemblies in the United States 1849-51. It is painful to add, that the latter years of this great benefactor were clouded by pecuniary embarrassments arising out of the engagements into which he entered in the course of his philanthropic labors. Very large sums of money passed through his hands, in payment for the medals which he distributed to the members of the association, yet his great charities, and the enormous expenses of his various missions, and perhaps his own lack of prudent management involved him in painful difficulties. A pension of £300 was granted him by the queen 1847, and a private subscription also was made in his behalf. The fruit of his labors is still visible in Ireland. Though many of his enrolled members ceased after some years to observe the pledge of total abstinence, very few of these relapsed into drunkenness; and the general reform which he wrought in Ireland endures to the present day.

MATHEWS, *măth'ūz*, CHARLES: English comedian: 1776, June 28—1835, June 28; b. London. He was educated at Merchant Taylor's School, London. His father was a bookseller, and intended his son for the same business; but his early inclination for the stage overcame parental counsel, and he made his first appearance as an amateur—in the part of Richard III.—at the Richmond Theatre 1793, and as a professional comedian in the Theatre Royal, Dublin, the following year. He first appeared in London at the Haymarket 1802, and subsequently he transferred his services to Drury Lane. In 1818 he gave his 'At Home' in London, and achieved an immense success. He visited America twice. In the autumn of 1828, he became joint proprietor of the Adelphi Theatre. He died at Plymouth, and was buried in that town.

M. was a wonderful master of personification and mimicry; and while imitating every one, he never lost a friend, or hurt the feelings of the most sensitive. He

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was greatly admired in social circles. His taste was as instinctive as his wit. His wonderful variety of facial expression, and his gentlemanly sarcasm, are still fondly remembered by old playgoers.—His son CHARLES JAMES M. (1803–78, b. Liverpool) also achieved reputation as a comedian unrivalled in his narrow range of light comedy.

MATHIL'DA, Countess of Tuscany (the Great Countess): known in history through her close political connection with Pope Gregory VII.: 1046–1114; daughter of Boniface, Duke and Marquis of Tuscany; of noble Lombard race. At her father's death M. inherited Tuscany, Liguria, parts of Lombardy, Modena, and Ferrara—territories forming really a powerful state. She married Godfrey (surnamed *Il Gobbo*, or the 'Hunchback'), Duke of Lorraine, 1069, by procuration. Godfrey soon went back to his duchy, and became a supporter of Emperor Henry IV., while M. made herself conspicuous by the zeal with which she espoused the cause of Gregory VII. She became his inseparable associate, was ever ready to assist him in all he undertook, and to share every danger from which she could not protect him. In 1077 (renewed 1102) she made a gift of all her possessions to the papal see—the foundation of the pope's temporal dominions. In 1081 she alone stood by the pope, when Henry poured his troops into Italy, burning to avenge his humiliation at Canossa; she supported him with money when he was besieged in Rome; and after his death at Salerno, boldly carried on the war against the emperor. Her second husband was Guelph of Bavaria; but neither of her marriages was of much importance in her life. She died at the Benedictine monastery of Polirone.

MATH'URA: see MUTTRA.

MATICO, n. *măl'î-lō* (*Artanthe elongata*): shrub of nat. order *Piperaceæ*, native of Peru; remarkable for the styptic property of its leaves and unripe fruit, used for stanching wounds.

MATIES, n. plu. *măl'îz*: a name for a certain quality of Scotch-cured herrings: see MATTIES.

MATIN, a. *măl'în* [F. *main*; It. *mattino*, morning—from L. *matulīnūm*, the morning]: pertaining to or used in the morning: N. in *OE.*, the summons to morning prayer; morning worship. MATINS, n. plu. *măl'înz*, morning service or prayers; the first canonical hour for prayers in the Rom. Cath. Chh.—in the Breviary at about midnight; also spelled MATTINS, but wrongly. MATINAL, a. *măl'î-năl*, pertaining to the morning: see CANONICAL HOURS.

Note 1.—Services of worship were held in times of persecution by the early Christians under cover of night, and were hence called *Nocturns*; *Lauds*, an early morning service, was joined to *Nocturns*, and the united service called *Matins*, from L. *matulīnus*, applied to anything taking place early in the morning.

Note 2.—The spelling *Mattins* with the double *t* may be due to the It. *mattino*, or simply to denote that *a* had a short sound.

MATIN DOG—MATRIMONY.

MATIN DOG: large kind of dog, now almost peculiarly French; but supposed to have been introduced into France from n. Europe. It is allied to the Danish dog; has rough hair; a rather flat forehead; a rather pointed muzzle; the ears erect, but bent down at the tips. It is generally of whitish color, clouded with brown. It is fierce, but not very courageous. Buffon, without reason, imagined it the original of many kinds of dog.

MATINÉE, n. *mă'trĩ-nă* [F. *matinée*—from *matin*, the morning]: a reception or musical entertainment held in the daytime. Now applied to an *afternoon* performance.

MATLOCK, *mă't'lok*: town in Derbyshire, England, 16 m. n. by w. from Derby; in the vale of the Derwent. Many of the inhabitants are employed in the lead mines and cotton manufacture. Pop. (1881) 4,396.

MATLOCK BATH, $1\frac{1}{2}$ m. distant, in a picturesque situation at the s. extremity of M. Dale, is noted for its hot springs of 68° F., the waters of which are largely charged with carbonic acid. There are interesting limestone caverns in the vicinity, and the waters of many of the streams produce 'petrifications.' M. Bank, near M. Bridge, in the neighborhood, is noted for its hydropathic establishments. The waters of these springs are used externally and internally for glandular affections, rheumatism, and biliary obstruction. Pop. of M. B. and Scarthin Nick (1881), 1,698.

MATRASS, n. *mă't'rās* [F. *matras*, a long narrow-necked bottle]: a chemical vessel in the shape of an egg, with a tapering neck, used for distilling, etc.

MATRICA'RIA: see CHAMOMILE.

MATRICE, n. *mă'trĩs*, **MATRICES**, n. plu. *mă'trĩ-sēz*: see **MATRIX**.

MATRICIDE, n. *mă't'rĩ-sĩd* [F. *matricide*—from L. *matricidũm*, a matricide—from *māter*, a mother; *cădĕrĕ*, to cut down, to kill: It. *matricidio*]: the murder of a mother; the killer or murderer of a mother. **MAT'RICI'DAL**, a. *-sĩ'dal*, pertaining to a matricide.

MATRICULATE, v. *ma-trĩk'ũ-lăt* [mid. L. *matriculātus*, one entered on the roll—from *matriculă*, a roll or register]: to enter, or to admit, into a society or college as a member by enrolling the name in the register—usually restricted to enrolment in a university. **MATRIC'ULATING**, imp. **MATRIC'ULATED**, pp: **ADJ.** entered or admitted, as a student into a university. **MATRIC'ULA'TION**, n. *-lă'shũn*, the act of registering and admitting as a member of a university.

MATRIMONY, n. *mă't'rĩ-mŏ-nĩ* [L. *matrimŏnĩũm*, marriage—from *māter*, a mother: It. *matrimonio*]: marriage; the married state; wedlock. **MAT'RIMO'NIAL**, a. *-mŏ'nĩ-al* [F.—L.]: of or relating to marriage; conjugal. **MAT'RIMO'NIALLY**, ad. *-ă*.—**SYN.** of 'matrimonial': nuptial; hymeneal; connubial; spousal.

MATRIX—MATTED.

MATRIX, n. *mā'trīks*, or **MATRICE**, n. *mā'trīs*, **MA-TRICES**, n. plu. *mā'trī-sēz* [L. *matrix* or *matricem*, the womb: It. and F. *matrice*]: the womb; the hollow or cavity in which anything is formed or cast; a mold; in *dyeing*, the five colors, black, white, blue, red, and yellow; in *geol.*, the rock or main substance in which a crystal, mineral, or fossil is embedded.

MATRON, n. *mā'trōn* [F. *matrone*—from L. *matrōna*, a wife—from *māter*, a mother: It. *matrona*]: a wife; the mother of a family; an elderly married woman; a nurse or female superintendent in an hospital. **MATRON-LIKE**, becoming a wife or matron; sedate; modest. **MA'TRONLY**, a. -*lī*, motherly; sedate; elderly. **MATRIONAL**, a. *mā'trōn-al*, of or relating to a mother; suitable to a matron. **MA'TRONIZE**, v. *mā'trōn-īz*, to render matron-like. **MA'TRON-IZING**, imp. **MA'TRONIZED**, pp. -*īzd*.

MATRONYMIC, n. *mā'trō-nīm'īk* [Gr. *mētēr*; L. *māter*, a mother; and Gr. *onōma*, a name]: the name of a man or woman derived from that of a mother.

MATROSS, n. *mā-trōs'* [Dut. *matroos*, a sailor: mid. L. *mattāriūs*, one who sleeps on a mat—from L. *matta*, a mat]: in *mil. in India*, one of the soldiers in a train of artillery who assist the gunners and act as guards.

MATSUMAI, *māt-sō-mī'*: town and port of Japan, important centre of commerce in the island of Yesso (Yezo). It is on the s. coast, about 60 m. w. of Hakodadi; pop. (1890) 32,738. It extends along the margin of an open bay, facing which is an island with a beacon, sheltering a harbor capable of receiving the largest ships.

MATSYS, *māt-sīs'* (or **MASSYS** or **MESSYS**), **QUINTIN**: artist: 1466–1530; b. Louvain; son of a smith, clock-maker, and architect. At the age of 25, M. settled at Antwerp, and became one of the earliest painters of note in that city. His style was somewhat hard, deficient in light and shade, but of great strength in expression. His finish is minute, with superfluous care for jewels and ornaments. His glow of color was often fine. Most of his pictures were religious. The two most celebrated were altar-pieces, now in museums—one at Antwerp, the other at Brussels. Others are in various European galleries.—A Protestant tendency, not fully developed in M., was stronger in some of his kindred: in 1543, for the offense of Bible-reading, his sister Catherine was buried alive in the cathedral square, and her husband was beheaded at Louvain.

MATTEAWAN, *māt-té-a-wōn'*: village in the town of Fishkill, Dutchess co., N.Y.; 1½ m. from Fishkill Landing on the Hudson river. M. is on the Dutchess and Columbia r.r. It has manufactures of lawn-mowers, files, carpentry-machines, and felt goods. Pop. (1870) 2,406; (1880) 4,411; (1890) 4,278; (1900) 5,807.

MATTED, **MATTING**: see under **MAT**,

MATTER.

MATTER, n. *măl'tér* [L. *materiă*, matter or stuff of which anything is made—from *māter*, a mother: It. *materia*; F. *matière*]: that which occupies space; body (see below); that which is visible or tangible; that of which anything is composed; subject; thing treated or spoken of; the whole concern; object; question considered; that about which we think or write; event; business; in *logic*, substantial as opposed to formal truth; cause of disturbance or any event; portion of time or distance, as a *mutter* of five miles; in *printing*, set-up type: V. to be of importance; to signify. **MATTERING**, imp. **MATTERED**, pp. *-têrd*. **MATTERLESS**, a. *-lēś*, without matter. **MATTER OF FACT**, a real occurrence; a reality; thing limited to fact, as opposed to a flight of the imagination. **NO MATTER**, no consequence or importance. **IT MATTERED NOT**, it did not signify; it was of no consequence. **WHAT MATTERS IT?** of what consequence or moment is it?—**SYN.** of 'matter, n.': materials; substance; elements; essence; pith; embodiment; affair; importance; difficulty; trouble; manuscript; copy; thing; question.

MATTER, n. *măl'tér* [F. *matière*; Sp. *materia*; Dut. *materie*, pus: W. *madra*, to fester—connected with F. *maturer*; L. *matūrārē*, to ripen, to bring to a head: comp. Gael. *mathair*, pus]: the moisture from a sore; pus: V. in *old* and *prov. Eng.*, to generate pus or matter, as a sore. **MATTERING**, imp. **MATTERED**, pp. *-têrd*. **MATTERY**, a. *măl'té-rī*, full of matter or pus; generating matter.

MATTER: from a physical point of view, anything that can affect the senses. or that can exert, or be acted on by, force. From a philosophical point of view, the existence of M., in the sense of *substance*, has been doubted by many philosophers, including some of the greatest of experimenters. Indeed, as we can know M. only by the forces that it exerts, it is obvious that the supposition of mere geometric points, capable of exerting force (technically called *Centres of Force*), will as satisfactorily account for all observed phenomena as any other idea of the ultimate nature of M. Here, however, we are dealing with a question confessedly beyond the reach of experiment, and belonging to the domain of metaphysics: see **PERCEPTION**.

Although experiment cannot lead to a knowledge of the ultimate nature of M., it may lead to important discoveries as to the arrangement of the molecules of different bodies, and their similarity or dissimilarity. For some of the questions to which an answer, though not a speedy one, may be expected, see **FORCE**, *Conservation of*: but to render intelligible a short account of some interesting ideas propounded by Thomas Graham (q.v.), some of these questions are here indicated.

The old notion of the transmutation of metals (see **ALCHEMY**) implicitly contains the assumption that all kinds of M. are ultimately one. Far from being a startling assumption, this is the simplest and most easily conceived notion on the subject; and it offers a re-

MATTER.

markably simple explanation of that extraordinary property of M. which Newton proved by careful experiments—that the weight of a body depends only on the quantity, not on the quality, of the M. that composes it. One idea, then, of M. is, that the atoms (or smallest parts, whatever these may be) of all bodies are identical, but that the molecules (each of which is a single atom, or a definitely arranged group of atoms) differ from one body to another. Thus (to take an instance merely for *explanation*, not as likely to be correct), if hydrogen be supposed to consist of the simple atoms of M., oxygen, each molecule of which is eight times as heavy as one of hydrogen, may have each molecule formed of eight elementary atoms, arranged in a group such as the corners of a die; carbon, six times as heavy per molecule, might be composed of six simple atoms grouped as at the corners of an octahedron; and so on. It is obvious that here each atom must be supposed capable of exerting force on every other. This leads naturally to speculations as to the medium through which this force, if it be exerted, at a distance, is propagated (see *FORCE, Conservation of*); and then we have introduced M. of a more refined character than our supposed elementary atoms. This difficulty has suggested to various philosophers the idea, that there is no *actio in distans*—that all pressure, for instance, in a gas is due to incessant impacts of its particles on each other and on the containing vessel. But, from various experimental results, we know that *this* species of motion is capable of being transferred from one body to another, of being increased or diminished by change of temperature; and is, in fact, *Heat* itself, one form of kinetic energy. This, if there be no ultimate difference between kinds of M., could never be the cause of their apparent difference. Hence, in Graham's view, though all ultimate atoms are identical in substance, they have special motions of their own, by which one is distinguished from another, these motions not being capable of transfer from one atom or group of atoms to another. It is difficult to conceive energy in such a form as not to be transferable, so that we refer the reader to Graham's own papers for the further development of his theory—remarking, in conclusion, that no theory of the nature of M. can be considered as even nearly complete till it account for the mutual action of separate atoms; for this the existence of a *continuous* material medium in space seems necessary; and this, in its turn, would, if accepted, enable us to dispense with the idea of atoms. In connection with this, Sir William Thomson has shown that mere heterogeneity (which we know exists in M.), together with gravitation, is sufficient to explain all the apparently discordant laws of molecular action; M. being supposed, in this theory, to be continuous, but of varying density from point to point.—See *ATOM: ATOMIC THEORY: CHEMISTRY: VORTEX: GASES: FORCE: ETHER OR ÆTHER: ATTRACTION* (and references · *ELECTRICITY: MAGNETISM: ETC.*

MATTERHORN—MATTHEW.

MATTERHORN: see CERVIN, MONT.

MATTHEW OF WESTMINSTER: early English chronicler in the reign of Edward II.; of whom nothing is known, except that he was a monk of the Benedictine Abbey of Westminster. His history or chronicle is in Latin, entitled *Flores Historiarum, per Matthæum Wesmonasteriensem collecti, præcipue de Rebus Brittannicis, ab Exordio Mundi, usque ad annum 1307* (Flowers of History gathered by Matthew of Westminster, chiefly concerning the affairs of Britain, from the Beginning of the World to the year 1307). That part which treats of English history from the Conquest to the close of Edward I.'s reign is considered valuable, on account of the manifest diligence, accuracy, and honesty of the writer. The work was printed first 1567, London; again (with additions) Frankfurt 1601. Bohn has published a translation into English (2 vols. 1853).

MATTHEW, *măth'lhū*, THE EVANGELIST: an apostle of the Lord Jesus. In the New Testament he appears first as a publican or tax-gatherer at the Sea of Galilee. There is no reason to doubt that M. is the same person referred to (Mk. ii. 14; Lk. v. 27, etc.) under the name 'Levi.' Levi seems to have been his original name, which was changed to M. After the ascension of Christ, M. is found at Jerusalem; he then disappears from Scripture, and the traditions concerning him are contradictory and of little value. There is no proof of his martyrdom.

MATTHEW, THE GOSPEL ACCORDING TO: one of the canonical books of the New Testament. Its date has been almost universally placed between A.D. 60 and 70. Irenæus places its composition 61; some of the later Fathers, as early as 41. The obvious design of the work is to show to the Jews in Palestine the Messiahship of Jesus; hence the frequency of the expression in regard to his acts—'that it might be fulfilled which was spoken by the prophet.' The language in which M. wrote his gospel has been a question in controversy. The opinion of the ancient church generally (founded on a passage in Papias, Bp. of Hierapolis, 2d c.) was, that M. wrote it first in Hebrew—rather in that mixture of Hebrew, Chaldee, and Syriac spoken in Palestine in Christ's time, and known as Aramaic. Erasmus doubted this, and held that M. wrote only the Greek gospel which we now possess. His view was supported by Calvin, Beza, and others of the reformers; and more recently, in some form, by Keim, Alford, Ellicott, Davidson, and the majority of scholars, orthodox and heterodox. Still more recently, the opinion of Bengel, that M. wrote first a Hebrew gospel, and then translated it into Greek, has been advocated by Guericke, Olshausen, Schaff, Godet, and other eminent scholars. The passage in Papias is not clear; and some grammarians and biblicists—e.g., Lachmann, Ewald, Meyer, Reuss, and Credner—understand it to mean that M. drew up a series of notices of Christ's

MATTHEW PARIS.

life and sermons, which were afterward arranged by another writer. The advocates of this view are not numerous. On the whole, the testimony for an original gospel of M. is so ancient and so strong, that it seems preferable to consider our Greek as a translation and enlargement of M's original Hebrew work—made probably by M. himself. All identifications of this original Hebrew gospel of M. with the *Gospel to the Hebrews* (mentioned by Irenæus and translated by Jerome) are fallacious.

The genuineness and canonicity of our gospel of M have been acknowledged in the church, and by heretics, from the earliest times; and this testimony has gathered strength as time has passed. The matter and mode of treatment are less lofty and spiritual than those of Luke and John; and the arrangement is simple, attempting no chronological order, but grouping miracles and events according to the nature of the matter.

MATTHEW PARIS, or MATTHEW OF PARIS: see PARIS, **MATTHEW**.

MATTHEWS—MATTHIAS CORVINUS.

MATTHEWS, BRANDER: author: 1852, Feb. 1—
—————; b. New Orleans, La. He graduated at Columbia Coll. 1871, at the law school 1873, and was admitted to the bar the same year, but instead of practicing law applied himself to literature, chiefly to the writing of dramas, fiction, and criticisms. He was appointed lecturer on literature at Columbia Coll. 1892. M. was one of the organizers of the Authors' Club (New York), and was prominent in establishing the American Copyright League. He has been a generous contributor to the best monthly and weekly periodicals. Among his works are: *The Theatres of Paris* (1880); *French Dramatists of the Nineteenth Century* (1881); *Margery's Lovers*, a comedy (produced 1884); *The Last Meeting* (1885); *A Secret of the Sea* (1886); *Cheap Books and Good Books* (1888); *American Authors and British Pirates* (1889); *A Family Tree, and Other Stories* (1889); *With My Friends: Tales Told in Partnership* (1891); *In the Vestibule Limited* (1892); *Americanisms and Britishisms* (1892); *The Decision of the Court*, a comedy (produced 1893); *The Story of a Story* (1894); *Studies of the Stage* (1894); *Vignettes of Manhattan* (1894); *This Picture and That* (1894); *His Father's Son* (1895); *Introduction to the Study of American Literature* (1896).

MATTHEWS, *măth'ūz*, GEORGE: revolutionary soldier: 1739–1812, Aug. 30; b. Augusta co., Va. He rendered important military service against the Indians, and later under Washington in the revolution; was severely wounded and taken prisoner in the battle of Germantown (1777, Oct.); settled in Oglethorpe co., Ga., 1785; was representative in cong. 1789–91; gov. of Ga. 1793–96; brig.gen. of militia, conducting military operations in Fla., 1811. He died at Augusta, Ga.

MATTHEWS, JOHN: 1744–1802, Nov.; b. S. Carolina: statesman. He was a most active supporter of the revolution; speaker of the S. Car. house of representatives; associate justice of the supreme court 1776; member of cong. 1778–82; gov. of his state 1782–3; and 1784 was made judge of the court of equity. He died at Charleston.

MATTHIAS I. (THE GREAT), King of Hungary: see MATTHIAS CORVINUS.

MATTHIAS, *măth-thī'as*: one of the 70 disciples sent out by the Lord Jesus; after the ascension of Christ, chosen by lot to fill the place vacated by Judas. Neither Scripture nor trustworthy tradition gives any further information about him.

MATTHIAS CORVINUS, King of Hungary: 1443, Mar. 27—1490, Apr. 6 (reigned 1458–90); b. Klausenburg, Transylvania; second son of John Hunyady (Corvinus)—see HUNYADY, JANOS. Having been released from the hands of the treacherous Frederick III. of Germany by Podiebrad, King of Bohemia, he returned to Hungary, and was elected king 1458. His accession was hailed with utmost enthusiasm over the whole country. But the Hungarian crown at this time was no chaplet of roses; two sovereigns, alike formidable—one, the Turk, Mohasmed II.,

from his military talents and immense resources; the other, Frederick III., from his intriguing policy—were busily conspiring against the boy-king. To meet these dangers, M. rapidly carried out his measures of defense, the most important of which was the formation of a regular force of cavalry, to form which, one man was enrolled out of every 20 families. This was the origin of the term ‘Hussar,’ which means in Hungarian ‘the price or due of twenty.’ M. fell on the Turks, who had ravaged the country as far as Temesvar, inflicted upon them a bloody defeat, pursued them as far as Bosnia, took the stronghold Jaicza, where he liberated 10,000 Christian prisoners, and thence returned to Weisenberg, where he was crowned with the sacred crown of St. Stephen 1464. He next suppressed the disorders of Walachia and Moldavia; but, feeling that his plans were counteracted by the intrigues of Frederick III. to gain possession of Hungary, M. besought the assistance of Pope Pius II., but to no purpose. After a second successful campaign against the Turks, he turned his attention to the encouragement of arts and letters, and adorned his capital with the works of renowned sculptors, in addition to a library of 50,000 volumes. He sent a large staff of literary men to Italy for the purpose of obtaining copies of valuable manuscripts, and adorned his court by the presence of the most eminent men of Italy and Germany. Even at the present day, the remains of the celebrated *Collectio Corvina* are eagerly sought after. He was himself an author of no mean ability, and he possessed a delicate appreciation of the fine arts. At the same time, the affairs of government were not neglected. The finances were brought into a flourishing condition, industry and commerce were promoted by wise legislation, and justice was strictly administered to peasant and noble alike. But the promptings of his ambition, and the pressure exercised by the Rom. Catholic party, cast an indelible blot on M.’s otherwise spotless escutcheon; he wantonly attacked Podiebrad, his father-in-law, the Hussite king of Bohemia, and after a bloody contest of seven years’ duration between these kings, the greatest generals of the age, the Hungarian power prevailed, and Moravia, Silesia, and Lusatia were wrested from Bohemia. Immediately after this war, M. went to meet his old enemies, the Turks, and inflicted on them, at Kenyérmező (1479), a defeat which kept them quiet for the next 46 years. After defeating an invading army of Poles, he had at length a fair opportunity for settling his differences with Frederick, and taking revenge on the insidious plotter who had imbibed his whole life. The Austrian fortresses fell before him in rapid succession. After an obstinate defense, Vienna shared the same fate (1485), and the Austrian emperor was reduced to beg his bread from village to village. M. now took up his residence in Vienna, but, while on the pinnacle of glory, he was struck down by a fit of apoplexy, and died at Vienna.

MATTHIESEN—MATTULLA.

MATTHIESEN (or **MATTHIAS**), **JOHN**: see **ANABAPTISTS**.

MATTIES, n. plu. *mă'tîz* [Ger. *matt*, of poor quality; Gael. *maith*, having the desired qualities, complete, full; Icel. *máti*, equal]: moderately-sized herrings which have very small milts and roes; the quality of east-coast, Scotch-cured herrings, being young fish in which the roes and milts are not distinctly developed. *Note*.—*Fulls* are the first quality of east-coast, Scotch-cured herrings, in which the roes and milts are fully developed; *spent fish* are those that, having spawned, have neither milts nor roes.

MATTING, n.: see under **MAT**.

MATTINS, n. plu., for **MATINS**: see under **MATIN**.

MATTO, or **MATO GROSSO**, *mă'tō grōs'sō* (*dense forest*): a state of Brazil, bordering on Bolivia: 532,708 sq. m.; peopled mostly by Indians. Chief rivers, the Madeira, Juruema and Paraguay, with their numerous affluents. Its soil is fertile, but there is almost no cultivation. Dense forests cover immense tracts of the country. Gold and diamonds abound, and indeed the mineral riches of the state have hitherto formed the chief barrier to its progress. Diamonds, gold, hides, balsams, ipecacuanha, and other drugs, are the exports. Manufactured goods are imported. Pop. (1890) 92,827.

MATTOCK, n. *mă'tōk* [Lith. *matikkas*, a grubbing-ax; Serv. *motika*, a hoe; Gael. *madog*; W. *matog*, a pickax]: a kind of pickax having one end flat and the other not pointed; a tool to grub weeds.

MATTOON, *mă-tôn'*: city of Coles co., in the e. central part of Ill.; junction of the Ill. Cent., the Indianapolis and St. Louis, and the Peoria Decatur and Evansville railroads. It has several mills, and important railroad repair and car works. Pop. (1900) 6,922.

MATTOON', **EBENEZER**: patriot farmer and soldier: 1755, Aug. 19—1843, Sep. 11; b. Amherst, Mass. He graduated at Dartmouth Coll. 1776; entered the revolutionary army for service in Canada; was lieut. of artillery at battle of Bemis Heights 1777, and later major; became a noted farmer on scientific principles in Amherst; many times member of state legislature; sheriff of Hampshire co. 20 years; member of cong. 1801-03; maj.-gen. state militia 1797-1816; adjt.gen. 1816; col. of the Ancient and Honorable Artillery Co. of Boston 1817; mem. of state constitutional convention 1820. For more than 26 years before his death at Amherst, he was blind.

MATTRESS, n. *mă'trēs* [OF. *materas*, a quilted cushion, a mattress—from It. *materazzo*—from Ar. *al matrah* (see **MAT**)]: a bed stuffed with hair or other soft material, and quilted.

MATTULLA, n. *mă-tŭl'la*: in bot., the fibrous matter covering the petioles of palms.

MATURATE—MAUCH CHUNK.

MATURATE, v. *mă'tŭ-rāt* [L. *maturātus*, made ripe—from *matŭrus*, ripe: F. *maturer*, to ripen]: to ripen; to hasten or promote suppuration; to grow ripe. **MAT'U-RATING**, imp. **MAT'URATED**, pp. **MAT'URATIVE**, a. *-rā-tŭv*, ripening; conducive to ripeness. **MAT'URA'TION**, n. *-rā'-shŭn* [F.—L.]: the process of suppurating perfectly; the formation of pus; state of growing ripe; act of ripening. **MATURE**, a. *mă-tŭr'*, ripe; arrived at fulness or completion, as of years or growth: well-digested and ready for execution, as a scheme: V. to promote ripeness; to advance toward ripeness or perfection; to become ripe. **MATUR'ING**, imp. **MATURED**, pp. *-tŭrd'*. **MATURE'LY**, ad. *-lŭ*. **MATURITY**, *mă-tŭ'rŭ-lŭ*, or **MATURE'NESS**, n. *-nĕs*, state of perfection or completeness, as of age or experience; ripeness. **MATURITY**, n. the time when a bill of exchange becomes payable. **MATURESCENT**, a. *mă'tŭ-rĕs-ĕnt* [L. *maturescen'tem*, becoming ripe]: approaching to maturity.—**SYN.** of 'mature, a.': perfect; completed; ready; digested; prepared.

MATURE, MATURITY: see under **MATURATE**.

MATUTINAL, a. *mă'tŭ-lŭ-nāl* [L. *matutīnālis*—from *matutīnus*, in the morning, early: It. *matulino*]: pertaining to the morning; early.

MAUBEUGE, *mō-bĕzh'*: fortress and manufacturing town of n. France, dept. of Nord, occupying both banks of the Sambre, 142 m. by rail n.e. from Paris, within two miles of the Belgian frontier. The origin of M. was in a double monastery for monks and nuns founded in the 7th c. Destroyed successively by the Normans, by Louis XI., by Francis I., and by Henry II., it finally fell to France by the treaty of Nimeguen (1678), and was fortified by Vauban. Besides its arsenal and several old convents, M. has a variety of important industries, as iron foundries, tanneries, and manufactories of firearms and iron and steel goods. It has also an active trade in coal, marble, slate, saltpetre, sugar, and oil. Pop. (1881) 17,221; (1896) 19,799.

MAUCH CHUNK, *mawk-chŭnk'*: mining boro. of Pa. cap. of Carbon co.: 121 m. w. from New York, 89 m. w.n.w. from Philadelphia; on the w. bank of Lehigh river, at the mouth of Mauch Chunk creek, in whose very narrow valley it is built, on both sides of the creek, with the precipitous Sharp and Mahoning Mts. rising close behind the houses. The Lehigh river here, 46 m. above its entrance into the Delaware river, passes through the Mahoning Mt. The Sharp Mt. anthracite coal mines, 9 m. w. from the village, up the valley of the creek, are among the most valuable in Penn. The coal was formerly brought down by cars moving by gravity and drawn back by mules. Later a return track was contrived, by the use of stationary engines at two points to raise the cars up inclined planes to a proper elevation. The construction of a tunnel at Nesquehoning has rendered the gravity road useless, except for pleasure excursions. The Lehigh canal, which formerly extended 25

MAUCHLINE—MAUDUIT.

m. further up the river to Whiteshaven, now terminated at M. C., the continuation not having been rebuilt since its destruction by a flood. Both the Lehigh Valley r.r., and the Cent. r.r. of N. J., pass through M. C. The mountain air, water, and picturesque scenery of M. C. have made it an attractive summer resort: Mt. Pisgah and Mt. Jefferson, near by, give magnificent views; and Glen Onoko, two miles from the village, is a charming spot. Upper M. C., on the plateau above the vill., and East M. C., on the e. bank of the Lehigh, have become considerable places.—Pop. M. C. (1880) township 4,082, borough 3,841; (1900) township 2,896, borough 4,029.

MAUCHLINE, *mōch'lin*: town in the county of Ayr, Scotland, surrounded by a picturesque country. M. has long been noted for the making of a beautiful description of snuff-boxes, cigar-cases, and like articles. The bridges in the neighborhood over the river Ayr attract attention: one at Barskimming consists of a single arch 100 ft. wide, 90 ft. high. In the vicinity is M. Castle, formerly possessed by the Loudon family, who held the title Viscount Mauchline. Robert Burns spent nine years of his life at the farm of Mossgiel, about half a mile n. of M. The cottage of 'Poosie Nancy,' theatre of the 'Jolly Beggars,' and Mauchline Kirk, the scene of the 'Holy Fair,' are in the town.

MAUD, n. *mawd* [Scot. *maud* or *maud*]: a wrapping plaid or shawl made of undyed wool; a gray-striped plaid worn by shepherds in the s. of Scotland.

MAUDLIN, ā. *mawd'lin* [corrupted from *Magdalen*, who is drawn by painters with swollen eyes and disordered look: OF. *Magdaleine*]: crying or sentimentally drunk; fuddled; approaching to intoxication; stupid.

MAUDSLEY, *mawdz'li*, **HENRY**, M.D.: English physician and physiologist: b. Giggleswick, Yorkshire, 1835, Feb. 5; graduate in med. of the Univ. of London 1856; resident physician to lunatic asylum Manchester 1859-62; and from 1862 settled in London as consulting physician on mental disease. He became prof. of med. jurisprudence in the Univ. of London 1875; also consulting physician W. London Hospital; and ed. *Journal of Med. Science*. He has pub. *Physiology and Pathology of the Mind* (1867), *Body and Mind* (1870), *Responsibility in Mental Disease* (1874).

MAUDUIT, *mō-dwē'*, **ISRAEL**: English sympathizer with the Amer. revolution: 1703-1787, June 16; b. Exeter, England. He was educated as a dissenting minister, but became a successful merchant with his brother Jasper, for whom he acted as agent in England of the province of Mass. from 1763. He became collector at Southampton 1765, and in the next ten years wrote several pamphlets urging upon the British public and govt. the justice of the colonial cause. At a later date he became an advocate of Amer. independence.

MAUGRE—MAUMEE RIVER.

MAUGRE, prep. *maw'gër* [F. *malgré*, against the will—from *mal*, ill; *gré*, will—from L. *malus*, bad; *gratum*, a pleasant thing]: in spite of; in opposition to; notwithstanding.

MAU'I: see **SANDWICH ISLANDS**.

MAUKIN, n. *maw'kīn*: see **MALKIN**.

MAUL, n. *mawl* [F. *mail*, a mall, a hammer—from L. *malleūm*, a hammer]: a heavy wooden hammer; also written **MALL**.

MAUL, v. *mawl* [Icel. *mal*; Ger. *mahl*, a mark, a stain: prov. Eng. *mawl*, to cover with dirt: comp. Gael. *meall*, a lump, a bunch]: to disfigure by ill-usage; to hurt coarsely or roughly. **MAUL'ING**, imp.: N. a rough beating, as with a cudgel. **MAULED**, pp. *mawld*.

MAULE, *mow'lā*: province of s. Chili, between the Andes and the Pacific; having a line of coast mts. on the w., and many hills in its e. part, while centrally it is a region of plains, very rich in pasturage for cattle, and highly cultivated, with a temperate climate, and abundant production of wheat, corn, barley, and vegetables, besides wines, salt, and cheese. From the hills is brought valuable timber for ship-building, a principal industry on the coast. The M. river, the n. boundary, is navigable 30 m. from the sea, but for small vessels only, on account of the bar at its mouth and its numerous rapids. Its waters supply many irrigating canals, and furnish power for flour mills. The largest port is Constitucion.

MAULMAIN': see **MOULMEIN**.

MAUL-STICK, n. *mawl'stik* [Ger. *maler-stock*, a maulstick—from *malen*, to paint, and Eng. *stick*]: the stick on which an artist rests and steadies the hand while painting; also written **MAHL-STICK**.

MAUMEE RIVER, *maw-mē'*: stream formed by the union at Ft. Wayne, Ind., of the St. Mary's and St. Joseph's rivers, and flowing thence about 100 m. across the n.w. corner of O. to the w. extremity of Lake Erie, which it reaches through Maumee Bay. Below the rapids which end 12 m. above its mouth, it is practically a part of the bay and lake, with width of one-third mile to one mile, and channel 12 to 30 ft. deep. Toledo, now an important commercial port and great railway centre, is four m. above its mouth. The rapids are 18 m. long. Between Toledo and the rapids are many low islands. The stream is liable to great variation in volume of water, and the spring freshets are sometimes tremendous. The M. is navigable to S. Toledo, 8 m. above Toledo, and in high water to Defiance, 42 m. farther.—**MAUMEE BAY** is a small shallow body of water between North Point and Cedar Point, 7 or 8 m. in length, and about the same in width, with low marshy shores which are a favorite resort for water-fowl, and therefore for duck-hunters. The channel through it, from the lake to M. river, is crooked, but has been much improved by the United States govt. in recent years: its depth is 12 to 14 ft.

MAUNA KEA—MAUNDRIL.

MAUNA KEA, *mow'na kū'ā*: volcanic mountain in Hawaii, abt. 14,000 ft. high: see SANDWICH ISLANDS.

MAUNA LOA, *mow'nā lō'ā* ['long or high mountain']: a volcanic mt. of Hawaii, the chief of the Sandwich Islands. It is notable among mountains of such great height for being entirely the result of the outpour from the earth of highly fluid lava, which has flowed out very widely and formed an elevation of 13,760 ft., with slope so gentle as to give a regular dome, up whose sides forest and other vegetation reaches to the height, in different places, of 5,000 to 10,000 ft., while the summit is usually clad with snow. Its immense breadth occupies a large part of the central and s. regions of the island, and its top is sometimes seen at sea from a distance of 5² leagues, the most remarkable instance known of the distant visibility of a mountain. Numerous craters of enormous size are on its sides or near its summit, and new ones open with fresh eruptions. The terminal crater, KILAUEA, with a breadth of 8000 ft., extended by depressions, in a n. and s. direction, to 13,000 ft., is over 1,000 ft. deep, and has nearly perpendicular walls. Nothing can exceed the grandeur and terror of its eruptions, taking the form of immense fountains of glowing fiery lava, from the top and sides of the mountain. 1859, Feb., the display of white-hot fluid lava lasted four or five days. 1868, Apr., the hot lava forced its way underground 20 m., and broke out through a fissure two miles long. A continuous fiery fountain a mile long was observed, formed by separate fountains uniting, and the crimson lava and red-hot rock were thrown to the height of 500 or 600 ft., taking a rotary motion, uniformly toward the south. In 1881 an outburst lasted 9 months, forming a river of lava, which spread at times to 3 m. in width, and extended 50 m. from its source.

MAUND, n. *mawnd* [F. *mande* or *manne*, an open basket: Fris. *maujn*, a turf or wood chest: W. *mawn*, turf]: a hand-basket; a round hamper without a cover. *Note*.—MAUND and MAUNDY are very probably connected. The broken food for the poor was placed in *maunds*—that is, baskets provided for containing the *mandate* bread for the poor: in *slang*, MAUND is 'to beg': see MAUNDY.

MAUND, n. *mawnd* [Hind. *man*]: in *East Indies*, a weight: varying in different localities.

MAUNDER, v. *mawn'dér* [Bav. *maudern*, to murmur: Scot. *maunt*, to mutter: Gael. *manndach*, stuttering]: to mutter; to grumble; to wander in talking. MAUNDER'ING, imp. MAUN'DERED, pp. -*dérd*.

MAUNDRIL, n. *mawn'drīl*: in coal-mining, a pick with two shanks.

MAUNDY—MAUPERTUIS.

MAUNDY, a. *mawn'dī* [*F. mandé*, a doublet of *F. mandat*, a mandate, an order: *OF. manle*, that which is commanded—from *L. mandātum*, that which is commanded, a command, being the first word of the *L.* sentence, *Mandatum novum do vobis*]: in the *Rom. Cath. Chh.*, the name applied to the office appointed to be read during the ceremony of washing the feet of poor persons, in imitation of our Lord when he washed his disciples' feet after supper, saying *Mandatum novum do vobis*—'a new commandment I give to you.' **MAUNDY THURSDAY**, in *Eng.*, Thursday in Holy Week (q.v.); the day before Good Friday. The name is derived from *mandatum*, the first word of the service chanted at the washing of the feet of pilgrims on that day (from *John xiii. 34*). The washing of the pilgrims' feet is of very ancient usage, being referred to by *St. Augustine*; and in ancient and modern times, it was accompanied by a distribution of 'doles,' which were handed to the pilgrims in small baskets, thence called 'maunds.' The distribution of doles was retained till 1838, since which period the 'Maundy' men and women receive a money-payment from the clerk of the almonry office instead of it.

MAUPASSANT, *mō-pa-sōng'*, **HENRI RENÉ ALBERT GUY DE**: French author: 1850, Aug. 5—1893, July 6; b. Château de Miromesnil, Seine-Inférieure, France. He attended school at Yvetot, and graduated at the college of Rouen, after which he became a clerk in the navy dept. at Paris. During ten years' service in that dept. he devoted himself more and more to literary writing, under the training of his uncle, *Gustave Flaubert*, attaching himself to the younger branch of the naturalistic school. In 1879 his play *Histoire du vieux temps* was performed in Paris, but without making any special impression. This was followed by a volume of lyrics, 1880, and a short story, *Boule de suif*, the latter ranking him at once with writers of greatest ability. He then published, in rapid succession, about 20 vols. of fiction, each of which in turn seemed to enhance his fame. In 1891 his mind became unbalanced and he attempted suicide; general paresis followed, and in 1893 he was confined in a private asylum at Passy, where he died. Among his works are: *Mademoiselle Fifi* (1882); *Une vie* (1883); *Au soleil* (1884); *Yvette* (1884); *Contes du jour et de la nuit* (1885); *Mont-Oriel* (1887); *Pierre et Jean* (1888); *Fort comme la mort* (1889); *Notre cœur* (1890); *L'Homme de lettres* (1892); *Le paix du ménage* (*Comédie Française*, 1893).

MAUPERTUIS, *mō-pār-tū-ē'*, **PIERRE LOUIS MOREAU DE**: French mathematician: 1698, July 17—1759, July 27; b. St. Malo: he served in the army five years; then turned to his favorite studies. He advocated *Newton's* physical theory, in opposition to that of *Descartes*, and attacked *Voltaire*, who replied with satire overwhelming. In 1740, he went to Berlin, on invitation of *Frederick II.*, to be pres. of the Acad. there; but his morbid self-conceit excited general dislike.

MAURETANIA—MAURICE.

MAURETANIA: see MAURITANIA.

MAURICE, *maw'ris*, Prince of Orange and Count of Nassau: one of the most skilful and distinguished generals of his age: 1567, Nov. 14—1625, Apr. 23; b. Dillenburg; son of William I., Prince of Orange. After his father's assassination 1584, the provinces of Holland and Zealand, and afterward Utrecht, elected him their stadtholder or governor. A great portion of the Netherlands was still in the hands of the Spaniards: but under the admirable leadership of M., the Dutch rapidly wrested cities and fortresses from their enemies. In 1591, Zutphen, Deventer, Nimeguen, and other places fell into their hands; 1593, Gertruydenberg; and 1594, Gröningen. In 1597, with the help of some English auxiliaries, M. defeated the Spaniards at Turnhout in Brabant, and in 1600 won a splendid victory at Nieuport. Finally, 1609, Spain was compelled to acknowledge the United Provinces as a free republic. The ambition of M., however, was excited to the desire of sovereignty; but in this, notwithstanding the love and respect of the people, he finally failed. See BARNEVELDT. He died at the Hague.

MAURICE, Duke and Elector of Saxony: 1521, Mar. 21—1553, July 11; b. Freiberg; eldest son of Duke Henry of the Albertine line (see SAXONY), and nephew of Duke George (q.v.) the Bearded, the most bitter opponent of the Reformation. He espoused, 1541, Agnes, daughter of the Landgraf Philip of Hesse; and later, in the same year, succeeded his father in the duchy of Saxony and its dependencies. He was scarcely established in his dominions, when a dispute arose between him and his cousin, the Elector John Frederic, regarding their respective rights over the bishopric of Meissen, the common property of the Ernestine and Albertine lines; but by the influence of Luther and of the Landgraf Philip, temporary reconciliation was effected. M. took part in the campaign of 1542 against the Turks in Hungary, and gave such signal proof of military talent, that the emperor on his return eagerly pressed him to accept a command in the armies on the w. frontier of Germany. M. was nothing loath to continue his military career, but insisted on obtaining the protectorate of the bishoprics of Magdeburg and Halberstadt, in recompense of his services; a stipulation to which Charles would not consent. M. accordingly returned to his duchy, and though still on the most friendly terms with the emperor, took part in the deliberations of the Prot. League of Schmalkald (q.v.), being himself a professed Protestant, and the son-in-law of one of the chiefs of the League. He refused, however, though agreeing with the objects of the League, to become a member; and the judicious gift to him by the emperor of the much-coveted protectorate above mentioned, and subsequently (1546, June 19) a solemn deed of the emperor at Ratisbon, by which the Ernestine portion of Saxony and the

electoral title were transferred from John Frederic to M., secured the latter's energetic support. When Charles, at the commencement of the war, was cooped up in s. Germany by the army of the League, M., by invading the Saxon electorate, compelled the Protestants to retire northward, thus relieving the emperor, and enabling him to subdue Swabia and the Upper Rhine districts. But by this maneuver he drew an overwhelming attack upon himself, and was driven by the incensed John Frederic from the electorate, deprived of his own dominions, and reduced to extremity. At this critical moment, the emperor came to his aid; and M. and the Duke of Alva (see ALBA), at the battle of Mühlberg, annihilated the elector's army, and took him prisoner. M. was now, in accordance with the previous agreement, ruler of the whole of Saxony, with the electoral dignity; and having obtained from the emperor all the gratification of his ambitious desires which could be hoped for from that quarter, their friendly relations became more dependent on the course of events. The retention in confinement of Philip of Hesse, whom M. had induced to submit to the emperor, was the first cause of estrangement; the incessant attempts of the emperor to increase, by modifications of the imperial system, his own preponderance in Germany, supplied another; and though the new elector zealously supported the Interim (q.v.) of Augsburg 1547, he gradually came to see that his close alliance with the emperor was alienating from him the affections of his Prot. subjects. He accordingly at once abandoned the cause of the emperor with as little scruple as he had formerly sacrificed the interests of his relatives and co-religionists; and, in common with the princes of Kulmbach and Hesse, secretly sent (1551, May) agents to Paris and London to negotiate an alliance against Charles V., while he leisurely carried on the siege of the rebellious city of Magdeburg as pretext for keeping an army afoot. Meanwhile, Charles, at Innsbruck, was employing himself in building up vast schemes of ambition, little dreaming of the mine which the man whom he most of all confided in was preparing to spring under his feet; till the manifesto, or rather ultimatum, of the Prot. princes, in which they demanded the release of Philip of Hesse, and the total abolition of the arbitrary authority of the imperial government; and the capture by them of Augsburg, while their allies, the French, took Metz; rudely drew away the veil from his eyes. Without money, without troops, without allies, nothing but a secret flight from Innsbruck appeared open to him; but he had gone only as far as Füssen (a town on the Lech, on the borders of Bavaria and the Tyrol), when the news that M. was marching in this direction, forced him to hasten again to Innsbruck. April 18, by the mediation of Ferdinand, King of the Romans, a treaty was concluded at Linz granting the demands of the Protestants; but as it was not to take effect till May 26, M. employed himself in attacking

(May 18) the camp of Reitti, in which soldiers were being assembled for the emperor, defeated and wholly dispersed the imperialists, and advanced on Innsbruck with the view of taking Charles captive, when his progress was stopped by a mutiny in his army; and the emperor escaped. His advance on Innsbruck so alarmed the members of the Council of Trent, that they fled from the town, and the sittings were thenceforth suspended for some years. Finally, at a convocation of the electors and princes of the empire at Passau, the terms of a treaty of peace were discussed, M. directing the cause of the Protestants, and Ferdinand attending to the imperial interests; and it was ultimately agreed that Protestants were free to exercise their worship; that the imperial chamber, from which Lutherans were not to be excluded, should render justice irrespective of religion; and that the Aulic Council should be composed exclusively of German ministers. These conditions, which in political matters secured 'Germany for the Germans,' and in religious affairs permanently established the principles of toleration, were embodied in the agreement called the *Peace of Passau* (1552, Aug. 22). The bitter dislike conceived by the emperor toward M., on account of these transactions, prompted him to entertain the idea of deposing him from the electorate, and reponing John Frederic; of which scheme, M. being apprised, he, with his usual subtlety and address, patched up a reconciliation with the emperor, and went to take part in the campaign of 1553 against the Turks, who were gradually gaining ground in Hungary. Returning soon, he found that one of his former allies, Albert, Markgraf of Kulmbach, had refused to accede to the treaty of Passau, and continued the war on his own account, making raids on the ecclesiastical princes of the Rhine and Franconia. M. speedily discovered that the markgraf's apparent obstinacy was the fruit of a secret understanding with the emperor, who was anxious to secure the services of a general and army capable of wreaking his vengeance on the perfidious Saxon prince. So, about midsummer of 1553, M., putting himself at the head of 20,000 men, marched to protect his bishopric of Magdeburg against the ecclesiastical spoliator, and falling in with him at Sievershausen, completely defeated him July 9, but received in the conflict a bullet-wound which proved fatal two days later. Thus fell, at the early age of 32, a prince who had already established his reputation as one of the ablest generals and diplomatists of his time. So thoughtful and reticent, so enterprising and energetic, so correct in judgment and unfailing in action, and at the same time so wholly devoid of moral sentiment, he is one of the most prominent instances of power without principle which the world's history has presented. His calculating, plotting mind was concealed under a jovial exterior, and a genuine fondness for the favorite pastimes of the age. Yet this unprincipled dissimulator's states were the best governed of the empire; the great vassal was

equal with the meanest peasant in the courts of justice; great advances were made in education; and though the least religious man of the time (in fact, honest only in this point, that he did not pretend to a piety which he did not feel), the rights of the various religious sects were strictly maintained. He died at an epoch which was big with the fate of Germany; for his settled programme of action was, after defeating the markgraf, to march on the Low Countries, unite with the French, with whom he had formed a firm alliance against the emperor, and then attack the latter. Charles V. would have had apparently little chance of offering a successful resistance to such an overwhelming attack.—See the biographies by Camerarius, Langenn, and Voigt (1876). His daughter, Anne, became the wife of William of Orange, liberator of the Netherlands.

MAU'RICE, Count of Saxony (MARSHAL SAXE): see SAXE, HERMANN MAURICE.

MAU'RICE, JOHN FREDERICK DENISON, D.D.: clergyman of the Church of England, and one of the leading thinkers of his age: 1805, Aug. 29—1872, Apr. 1; son of a Unitarian minister. His reputation at Cambridge University for scholarship stood high, but being at this time a dissenter, and otherwise not in a position to sign the Thirty-nine Articles, he left Cambridge without taking a degree, and commenced a literary career in London. He wrote a novel, *Eustace Conyers*, and for a time edited the *Athenæum*, then recently started. Soon a change came over his religious sentiments and opinions; his spirit was profoundly stirred and influenced by the speculations of Coleridge, and he resolved to become a clergyman of the Church of England. He went to Oxford, where he took the degree M.A., and was ordained priest 1834. He became chaplain to Guy's Hospital 1837; prof. of literature at King's College, London, 1840; and was prof. of theology there 1846-53. The aim of his life was the interpretation of Christianity in accordance with the most pure and spiritual conceptions of our nature; and his labors in this direction have had results deep and far-reaching. Carlyle records John Sterling as 'going to Guy's' Sunday after Sunday. At the time of his death, there was probably no clergyman in the United Kingdom more deeply revered and loved than he was by a large body of the thoughtful and cultivated portion of the religious laity. He also gathered round him, *within* the church, a large number of adherents, especially among the younger clergy, who constitute what is commonly called the 'Broad Church' party (a name which deeply distressed M., who sought to found no party), though its members repudiate any sectional tendency, and do not associate to carry out any sectional schemes, like the 'Evangelicals' and Tractarians. His regular congregation was never large: his work was that of a teacher of teachers. M.'s theological opinions, especially on the question of the atonement, are not considered

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'sound' by the 'orthodox' portion of the clergy; and the publication 1853 of a volume of *Theological Essays*, in which, among other heresies, he took the charitable view of future punishments, lost him the professorship of theology in King's College, London. For many years M. was chaplain of Lincoln's Inn, and 1860 he was appointed incumbent of the district church of Vere street, Marylebone. He was always a warm and enlightened friend of the working-classes, and founded the first Working-man's College in London. M. became prof. of moral philosophy at Cambridge 1866. He wrote largely. All his works are written in exquisite English, and evince a beauty and tenderness of Christian sentiment nearly faultless, but united with a subtlety of thought that frequently passes into mysticism. This last element probably prevents his writings from being generally popular: they appeal to an unusual order of mind. As to his personal character it has been well said—'Those who were privileged to know him did not know a more beautiful soul.' His principal productions are his *Mental and Moral Philosophy*, *Religions of the World*, *Prophets and Kings of the Old Testament*, *Patriarchs and Lawgivers of the Old Testament*, *The Kingdom of Christ*, *The Doctrine of Sacrifice*, *Theological Essays*, *Lectures on the Ecclesiastical History of the First and Second Centuries*, *Gospel of St. John*, and *Social Morality*. M. strenuously controverted Mansel's views on our knowledge of God (see BAMPTON LECTURES). He was the mainspring of a movement known as Christian Socialism; helped to promote the Working-man's College; and was the founder and guiding spirit of the Queen's College for Women, in which he taught. See the *Life of F. D. Maurice*, based mainly on his own letters, by his son, Col. Maurice (2 vols. 1884).

MAURICIUS, *maw-rish'-ūs*, FLAVIUS TIBERIUS, *flā'-vī-ūs tī-bē'rī-ūs* (MAURICE), Byzantine Emperor: abt. 530-602, Nov. 27 (reigned 582-602); b. Arabissus, in Cappadocia; of Roman descent. In 578, M. was appointed by Tiberius II. to command the army against the Persians. In 582, he obtained the rare honor of a triumph at Constantinople, and the same year succeeded Tiberius on the throne. He married the emperor's daughter Constantina. Immediately after his accession, the Persians invaded the Byzantine territories; and a fierce contest through eight years resulted, chiefly because of the internal convulsions that distracted Persia, in favor of the Byzantines. The king of Persia, Khusru (or Chosroes) II., driven from his throne, fled to Hierapolis, whence he sent to M. a letter, beseeching shelter and aid. The emperor's generous nature was not proof against such an appeal; an army was immediately assembled, to which the loyal Persians flocked from all quarters; and 591, Khusru was restored to his throne, giving up to M., in evidence of his gratitude, the fortresses of Dara and Martyropolis, the bulwarks of Mesopotamia. Some time after these events, a war broke out with the Avars; and after two years of bloody conflict, with little gain to

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either side, the Byzantines suffered a severe defeat, and 12,000 veterans were taken prisoners. M. refused to ransom them, and they all were consequently put to death. M.'s conduct has been satisfactorily accounted for (see Gibbon's *Decline and Fall*), but it excited a deep and lasting resentment among the people and the army; and in 602, when the emperor ordered his troops to take up their winter-quarters on the north (or Avarian) side of the Danube, they broke out into open revolt, elected a centurion, Phocas, for their chief, and marching upon Constantinople, which had declared against M., raised Phocas to the throne. M., who had abdicated and retired to Chalcedon, was pursued and taken, and, with his five sons and many of his friends, was put to death.

MAURIST, n. *maw-rĭst* [L. *Maurus*, the name of the favorite follower of St. Benedict]: members of the Congregation of St. Maur, to whom literature owes the stately tomes known as Benedictine Editions: see BENE-DICTINES.

MAURITANIA, *maw-rĭ-tā'nĭ-a*, or (properly) MAURE-TA'NIA: ancient name of the most n.w. part of Africa, corresponding in its limits to the present sultanate of Morocco (q.v.) and western Algiers, though its limits varied much. It derived its name from its inhabitants, the *Mauri* or *Maurusii*: see MOORS. It reached on the s. to the Desert, and was separated from Numidia on the e. by the river Mulucha or Molochath, now the Muluya. A large portion was very fertile.

MAURITIA, *maw-rĭ'shĭ-a*: genus of palms, having male flowers and female or hermaphrodite flowers on distinct trees, imperfect spathes, and fan-shaped leaves. They all are natives of the hottest parts of America. Some of them, like the Buriti (q.v.) Palm (*M. vinifera*), have lofty columnar smooth stems, others are slender, and armed with strong conical spines. The MIRITI Palm (*M. flexuosa*) grows to the height of 100 ft.; it has very large leaves on long stalks. The stem and leaf-stalks are used for various purposes. A beverage is made from the fruit, as from that of the Buriti Palm and several other species.

MAURITIUS, *maw-rĭsh'ĭ-ŭs*, formerly ISLE OF FRANCE: island of the Indian Ocean, belonging to Great Britain; 550 m. e. of Madagascar, 115 m. n.e. of the island of Réunion; lat. 19° 58'—20° 33' s., and long. e. from Greenwich 57° 17'—57° 46'; 36 n long. 23 m. broad; abt. 713 sq. m. Pop. (1901), including the small dependencies of Seychelles, Rodriguez, etc., and exclusive of the military, 379,073, giving a very high average to the square mile. Of the total pop., 258,985 were estimated to be Indian coolies. The surface is of varied formation, a great portion being volcanic; while its coast is fringed by extensive coral reefs, pierced in several places by the estuaries of small streams. Its mountains, though of no great height, are marked by the usual irregularities of volcanic

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formations. Of these, the most celebrated is the Pieter Botte, 2,676 ft. high, in the rear of the town of Port Louis, and forming a remarkable obelisk or cone sustaining on its apex a gigantic piece of rock, which has the appearance of being poised upon its summit with the nicest precision. In the island are remains of several small craters, and traces of lava are numerous. The principal towns are Port Louis, cap. (pop. abt. 70,000), and Grande Port, or Mahébourg, the s. port, the latter difficult of access for shipping and encumbered with coral reefs. Port Louis comprises a spacious harbor, and is provided with an inner basin, denominated the Fanfaron, wherein vessels can take refuge during the violent cyclones which occur here. There is also a slip upon which large vessels can be raised for examination and repair.

M. produces annually much sugar, which it exports to England, France, and Australia. The nature of the soil, however, in many parts prevents a universal development of this culture. In some districts, considerable tracts of cane-growing land are encumbered with large boulders; in many places, these have been collected into rough walls, between which the canes are planted, while in others their size precludes removal. The method in the cultivation of the cane is similar to that in the W. Indies; but the bulk of the sugar is ultimately shipped in bags composed of the leaf of the Vicona palm. The climate of this island is remarkably fine, except that it is very hot in summer. There are four seasons: the high temperature is in Nov., Dec., and Jan. Throughout the year, the thermometer ranges from 76° to 90° in the shade. In some of the interior elevated districts, however, the climate resembles that of the hills of India, or in s. France. The s. portion of the island, called La Savanne, is exceedingly beautiful, and diversified with mountain and ravine, clothed with luxuriant wood. The mountains themselves are bold and fantastic, with every possible outline. Few communities present so varied an admixture as that of M. The descendants of the original French inhabitants represent a considerable portion of the influential classes; govt. officials and merchants, or planters of English birth or extraction, make up the remainder of those classes. In Port Louis may be seen representatives of almost every eastern nation. Many Chinese find their way here, and there is now scarcely a hamlet that has not its Chinese storekeeper. The Creoles, or native colored population, who derive their color from the African and Malagash slaves, form a considerable portion of the inhabitants. Emigration of coolies from British India, for supply of the sugar plantations, still continues. There are two lines of railway (87 m.), accompanied by telegraph lines. Some much-needed sanitary measures have been carried out. Roads have been made, bridges built, and light-houses have been erected off Grande Port. At Port Louis are spacious docks. Hospitals have been founded, and the establishment of savings banks has proved beneficial. In 1868, Mar., the island

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experienced a most calamitous hurricane; and during three or four years previous to 1870, a fearful epidemic raged. The gov. of M. is assisted by an executive council of 5 members, and a legislative council of 17. The revenue for 1880 amounted to £782,109, the expenditure to £757,396. The imports for 1880 (chiefly live-stock, rice, guano, grain, wine, machinery) were valued at £2,210,114; the exports (mainly sugar, with some rum and copper), at £3,656,656.

M. was discovered 1505, by the Portuguese commander, Don Pedro Mascaregnhas, and was subsequently visited by the Dutch under Van Neck 1598, who gave the island its present name in honor of Prince Maurice. The Dutch formed a settlement here 1644, but abandoned it. A new and more successful attempt at permanent establishment was made by the French 1721, already in possession of the adjacent island of Bourbon, who renamed it 'l'Ile-de-France.' M. remained in French hands until near the close of 1810, when it was taken by the British in an expedition under Gen. Abercromby, and has since remained a British possession. M. was the habitat of the Dodo (q.v.)

MAUROCORDATOS, *maw-ro-kor-dú'tos*, or MAVROCARDATO, *mâv-ro-kâr-dâ'to*: Fanariote family, distinguished for ability and political influence; descended from merchants of Chios of the Genoese family of Scarlati.—ALEXANDER M., prof. of medicine and philosophy in Padua, became dragoman or interpreter to the Porte 1681, plenipotentiary of the Porte in the negotiations for peace at Carlovicz 1699,—NICHOLAS M., the first Greek who was Hospodar of Moldavia and Wallachia.—CONSTANTINE M., brother of Nicolas, became Hospodar of Wallachia 1735, abolished slavery in that country, and introduced the culture of maize.—ALEXANDER, Prince M., 1787–1865, Aug., b. Constantinople, grandson of Constantine M., was active in the Greek contest for independence, prepared the declaration of independence and the plan of a provisional government, was elected pres. of the executive body; and being appointed commander-in-chief, undertook 1822 an expedition to Epirus, which ended in the unsuccessful battle of Peta; but he delivered the Peloponnesus by his bold and resolute defense of Missolonghi 1823. Notwithstanding violent political strife in which he was unfortunately involved, he was able afterward to render important services to his country—e.g., by the heroic defense of Navarino and Sphacteria. He was a steadfast admirer of English policy and institutions. After the accession of King Otho, he was at different times cabinet minister and ambassador at different courts.

MAURY, *maw'ri*, MATTHEW FONTAINE, LL.D.: naval officer, astronomer, and hydrographer: 1806, Jan. 14—1873, Feb. 1; b. Spottsylvania co., Va. In 1825 he was appointed midshipman in the U. S. navy, and during a four years' cruise round the world, in the *Vincennes* frigate, commenced a treatise on navigation, which was adopted

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as a text-book in the navy. In 1836 he was made lieut.; but being lamed by an accident, and unfitted for service afloat, he was appointed to the hydrographical office at Washington. Here he carried out a system of observations which enabled him to write his *Physical Geography of the Seas*, and to produce 1844 his works on the Gulf Stream, Ocean Currents, and Great Circle Sailing. He projected the maritime conference at Brussels 1853; and with the co-operation of the British govt., and assistance by observations and reports from naval officers and sea-captains, completed his sailing charts, to the great advantage of the commerce of the world. His model log-books were adopted in the meteorological office of the English Board of Trade, which was established by reason of them. In 1855 he was promoted to the rank of commander, and published *Letters on the Amazon and Atlantic Slopes of South America*. At the outset of the civil war 1861, M. took a command in the Confederate navy; and, having lost all his possessions, retired to England, where a large sum of money was presented to him by subscription. Maximilian, then claiming power in Mexico, appointed him imperial commissioner of emigration. At Maximilian's death M. returned to Va., where he died. M.'s services to meteorology and *practical* navigation were very great: his theories in *Physical Geography* are no longer generally accepted.

MAUSER GUN, *mow'zér*: the rifle invented by Werder, a Bavarian, and improved by Mauser, gunsmith of Würtemberg; and is the regulation weapon of the infantry of Belgium, Germany, except in Bavaria, where the Werder form of the gun is retained, Spain and Turkey. It differs from the needle-gun in being one-fifth lighter, and in having a longer range (about 1,200 metres), greater simplicity in loading, and greater rapidity in firing. The mechanism is so simple that loading and discharge are effected with only four movements. The bayonet, with which it is provided, is not inserted except for a bayonet charge.

MAUSOLEUM, n. *maw'sō-lē'ūm* [from the gorgeous tomb of *Mausōlus*]: a stately tomb or monument. MAUSOLE'AN, a. *-lē'ăn*, pert. to a mausoleum. A *Mausoleum* is a sepulchral monument of large size, containing a chamber in which urns or coffins are deposited. The name is derived from the tomb erected at Halicarnassus to Mausolus, King of Caria, by his disconsolate widow, Artemisia, B.C. 353. It was one of the most magnificent monuments of the kind, and was esteemed one of the seven wonders of the world. It was described by Pliny and other ancient writers, as late as the 12th c., and must have been overthrown, probably by an earthquake, during the following two centuries, for all trace of it had disappeared, except some marble steps, when the Knights of St. John of Jerusalem, 1404, took possession of the site of Halicarnassus, then occupied by a small village called Cleesy. While excavating among the ruins

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for building materials, the knights discovered a large chamber decorated with marble pilasters, and with richly inlaid panels. The sarcophagus of the founder was also discovered in another great hall. Excavations have been recently made by Newton, assisted by the British govt., and he has succeeded in bringing to light many of the beautiful sculptures of the Mausoleum; among others, the fragments of the statue of King Mausolus (now pieced together in the British Museum), and a portion of the Quadriga which crowned the monument. Many fragments of lions, dogs, etc., and a beautiful sculpture of a horse, have been found; also portions of friezes, of fine design and workmanship, the subjects of which invariably are Greeks in conflict with Amazons. The plan of the basement has been traced, the area being 126 ft. by 100 ft., and from the fragments of columns, Ionic capitals, etc., which have been found, the description of Pliny has been verified. The Mausoleum consisted of a basement 65 ft. high, on which stood an Ionic colonnade 23½ ft. high, surmounted by a pyramid, rising in steps to a similar height, and on the apex of which stood a colossal group, about 14 ft. in height, of Mausolus and his wife in the Quadriga; these statues are supposed to be the work of the celebrated Scopas. The above dimensions, from Newton's restoration, are disputed by Mr. Fergusson and others; but all agree that the total height, 140 ft., given by Pliny is probably accurate.

MAUSOLEUM, New: proposed method, and place, for disposal of the dead by entombment with desiccation; named from the magnificent sepulchre of King Mausolus (see MAUSOLEUM). The new plan, suggested by Dr. Charles A. Harvey, is that of entombing in cells into which one conduit brings highly dry air, and another carries away the moisture and gases of the dead body into a purifying furnace. Scientific experiments in Washington 1887-88 under direction of an expert sanitary engineer, and in New York (1888, June) under the auspices of the Medical College of the Univ. of the City of New York, demonstrated the desiccating yet not destroying efficacy of the dry-air current on the tissues of a lifeless body. In the earliest Washington experiments only animals were used. In 9 weeks the desiccation had taken away two-thirds of the weight, without much reducing the plumpness of the animal, while dissection showed that the drying-out of the water of the body, and escape of gases, had left it a cellular and sponge-like structure, proving conclusively how considerably the method, while disposing of everything subject to decay, would preserve the form and appearance of the dead. An experiment with a human subject completed the Washington investigation, with convincing effect on a large number of eminent scientific and public men. The New York experiments with human subjects added confirmation to the fact that desiccation, by a current of highly dry air, will preserve a body from all unwholesome and offensive change, and, in the end, transform it into a condition,

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in which it will remain an indefinite time, wholly inoffensive to either sight or smell.

In the New Mausoleum the space that holds a casket is designed to be a cell of concrete, from which gases cannot escape, and provided with an hermetically sealed glass door. The current of dry air which will be carried through the cell tends to resuscitate a possibly lingering life, the glass door permits inspection, and an electrical apparatus is adjusted to the body, so arranged that the slightest movement will ring an alarm, to continue until stopped. To this security against burial of the still living, is added absolute security against robbery or other outrage. The concrete used for the cells becomes impenetrable to air or moisture, yet the glass door to the narrow chamber always opens it to the eye, and otherwise if necessary; while the highly dry air which is drawn through the cell performs a function more beneficent than any embalmment, and carries away, in moisture, the fluids of the body, with its gases, to a furnace, in which everything noxious is destroyed. It is claimed that every variety of opportunity for entombment can be provided, on a scale of expense much below that of ordinary burial. And the proposed plan is commended to consideration by the now demonstrated fact, that burial in the earth poisons the water which passes through the soil, and the air which the living must breathe, and can never be made other than revoltingly perilous to public health. Plans are perfected for M. buildings at Washington and New Orleans; and for New York a structure of vast size and reposeful beauty is projected, at a cost of \$1,000,000.

MAUVAISES TERRES, *mō-vāz-tār'* [Fr. BAD LANDS]: general name for peculiarly worthless tracts; usually bare of vegetation, treeless, and desolate; though sometimes affording a little pasturage in the rainy season. The underlying rock is usually tertiary, and fossil remains of various mammals abound. One of the chief regions of M. T. is that on the White river, a branch of the Mo. river. Other examples are in Colorado, Nebraska, Dakota, and other western parts of the United States.

MAUVE, n. *mōr* [F. *mauve*—from L. *malva*, a mallow, the petals of which have purple markings]: purple dye obtained from aniline, one of the constituents of coal-tar. **MAUVINE**, a. *mōv'īn*, pert. to the color mauve.—See DYE-STUFFS.

MAVERICK, n. *māv'ēr-īk* [named after a Mr. *Maverick*, a large cattle owner, who neglected to brand his yearlings, whence they were called Mavericks]: in Texas, an unbranded yearling.

MAVIS, n. *māv'īs* [F. *mauvīs*; OF. *malvis*, the mavis—from mid. L. *malvitiūs*—from L. *malum*, bad, destructive; *vitis*, a vine]: in *Scot.*, a bird, also called the song-thrush—so named from being destructive to vines; the red-wing.

MAVROCORDATŌ: see MAUROCORDATOS.

MAW—MAXIM.

MAW, n. *maw* [Dut. *maag*; Icel. *magi*; Ger. *magen*; OHG. *mago*, the stomach; Fin. *mako*, stomach; *maku*, taste]: the stomach, used only of animals, except in contempt; the craw of a fowl. **MAW'-SKIN**, n. stomach of a calf prepared for making cheese rennet. **MAW'-WORM**, a worm that infests the stomach and bowels.

MAWKISH, a. *mawk'ish* [Scot. *mauk*, a maggot: Sw. *mask*; Norw. *makk*, a grub, a worm: Icel. *madkr*, a maggot—*lit.*, maggoty, then loathsome]: apt to cause satiety or loathing; disgusting; insipid; affectedly sentimental. **MAWK'ISHLY**, ad. -*ly*. **MAWK'ISHNESS**, n. -*nēs*, aptness to cause loathing.

MAWMET, n. *măw'mět* [a corruption of *Mahomet*]: in *OE.*, an idol; a puppet—so named by Christians of the middle ages from the fact of *Mahomet* being the object of their detestation. **MAWMETRY**, n. *maw'mět-rĭ*, the religion of Mahomet; idolatry.

MAW-SEED: name for Poppy-seed (*Papaver somniferum*) sold as food for cage-birds. **M.-S.** is given to birds especially when moulting.

MAX, **GABRIEL**: one of the most remarkable of modern painters: b. Prague, 1840, Aug. 25; second son of Joseph M. (sculptor, d. 1855); of mingled German and Czech (Bohemian) parentage. M. gained distinction and fame first by his *Crucified St. Julia*. He is pre-eminent among painters as a poet of deep, tender, and genuine feeling, with extreme fertility of imagination, and refined vigor and breadth in execution. His *Frühlingsmärchen* or *Spring Tale*, was awarded a gold medal at the Vienna Exposition 1873, and sold the next year for 15,250 marks. His *Light*, also at the Vienna Exposition, representing a blind girl sitting at the entrance of the catacombs offering to each comer a lighted lamp, is among his most remarkable productions. No more notable picture was seen at the Paris Exposition 1878, than M.'s *Christ Awakening the Little Daughter of Jairus from Death*, now in the Metropolitan Museum, New York. The number and variety of M.'s productions are large. His residence is in Munich.

MAXEN'TIUS, **MARCUS AURELIUS VALERIUS**, Roman emperor 306–312: see **CONSTANTINE I.**, the Great.

MAXILLA, n. *măks-ĭl'lä*, **MAXIL'LÆ**, n. plu. -*lĕ* [L. *maxilla*, a jaw]: the upper jaw; a jawbone; among articulate animals, the lower pairs of horizontal jaws. **MAXILLARĒ**, a. *măks'ĭl-lĕr*, or **MAXILLARY**, a. *măks'ĭl-lĕr-ĭ* or *măks-ĭl'lĕr-ĭ*, pert. to the jaw or jawbone. **MAXILLIFORM**, a. *măks-ĭl'li-fawrm* [L. *forma*, shape]: jaw-shaped.

MAXILLIPED, n. *măks-ĭl'li-pĕd* [L. *maxilla*, a jaw; *pedem*, a foot]: a jaw-foot; the footlike appendage of the mouth of a crab or lobster behind the maxillæ.

MAXIM, n. *măks'im* [F. *maxime*; Sp. *maxima*, a maxim—from mid. L. *maxima*, with *sententia*, the greatest sentiment or sentence—that is, the weightiest]: a leading or established truth; an adage; a proverb.—**SYN.**: apho-

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rism; apothegm; saying; axiom; by-word; saw; truism; principle.

MAXIMIANISTS, n. *măks-ĩm'ĩ-an-ĩsts*: in *chh. hist.*, sect of Donatists (q.v.). They derived their name from Maximianus, their leader.

MAXIMIA'NUS (or MAXIMIAN I.), MARCUS AURELIUS VALERIUS—surnamed HERCULIUS, Roman emperor 286–305: see DIOCLETIANUS.

MAXIMIA'NUS (or MAXIMIAN II.), GALERIUS VALERIUS, Roman emperor 305–311: usually called GALERIUS (q.v.).

MAXIMILIAN. n. *măks-ĩ-mĩl'yan* [named after King Maximilian]: a Bavarian gold coin, value \$3.24.

MAXIMILIAN, *măks-ĩ-mĩl'yan*, Ger. *măk-sē-mē'lē-ăn*, I., Roman Emperor: one of the most distinguished of the German emperors: 1459, Mar. 22—1519, Jan. 12; (emp. 1493–1519); b. Neustadt, near Vienna; son and successor of Frederick III. In his 19th year he married Maria, only child and heiress of Charles the Bold, Duke of Burgundy, and was soon involved in war with Louis XI. of France, who attempted to seize some of her possessions. M., though successful in the field, was compelled, by the intrigues of Louis in the Netherlands, and disaffection stirred up there, to betroth his daughter, Margaret, four years old, to the Dauphin, afterward Charles VIII.; and to give Artois, Flanders, and the duchy of Burgundy as her dowry. In 1486, he was elected king of the Romans. Insurrections in the Netherlands, encouraged and supported by France, occupied much of his time, and again involved him in war with Louis XI. He afterward repelled the Hungarians, who had seized great part of the Austrian territories on the Danube; and the Turks, who 1492 invaded Carinthia, Carniola, and Steiermark. He again took up arms against France, because Charles VIII. sent back his daughter, and married Anne of Bretagne, in order to acquire that great province. A peace was however concluded at Senlis 1493, M. receiving back the provinces which he had given with his daughter. On the death of his father 1493, he became emperor; and subsequently married Bianca Sforza, daughter of the Duke of Milan. He applied himself with wisdom and vigor to the internal administration of the empire, took measures for preservation of peace in Germany, and encouraged arts and sciences. But he was soon again involved in wars against the Swiss, the Venetians, and France. He sought to put a stop to French conquests in Italy, and was at first successful; but after various changes of fortune, and years of war, mingled with many political complications, he was compelled to give up Milan to France, and Verona to the Venetians. Nor was M. more successful against the Swiss, who 1499 completely separated themselves from the German empire. The hereditary dominions of his house, however, were increased during his reign by several fortunate additions: the marriage of his son Philip with the Infanta Juana,

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and of his daughter Margaret with the Infant Juan of Spain, led to the subsequent union of Spain with Austria; while the marriage of two of his grandchildren with the son and daughter of Ladislaus, King of Hungary and Bohemia, brought both these kingdoms to the Austrian monarchy. M. died at Wels, in Upper Austria. He was of chivalrous character. He wrote various works on war, gardening, hunting, and architecture, some poems, and an autobiography full of marvels.

MAXIMILIAN II., JOSEPH, King of Bavaria: 1811, Nov. 28—1864, Mar. (reigned 1848–64); son of Ludvig I. He married 1842 Princess Maria Hedwig, cousin of William I., German emperor. Until 1848 he took no part in political affairs, but busied himself in agricultural and other improvements, and in literature and science. In that year of revolutionary excitement, he was suddenly called to the throne, on his father's abdication, and adopted a policy accordant with the liberal tendencies of the time. Reactionary measures were afterward to some extent adopted; but M.'s reign was signalized chiefly by the encouragement of science. He was regarded with no favor by the ultramontane party; but without respect to their opposition, he brought to Munich men of liberal opinions, eminent in literature and science.

MAXIMILIAN (FERDINAND MAXIMILIAN JOSEPH), Archduke of Austria (Emperor in Mexico 1864–67): 1832, July 6—1867, June 19; b. Vienna; second son of Archduke Francis Charles of Austria, and younger brother of Francis Joseph I. M., who received a careful education, was very popular as gov. of the Lombard-Venetian Kingdom. In 1862, Napoleon III. of France deemed his way open—by reason of the rebellion in the United States—to interfere in the affairs of Mexico (q.v.), and in 1863 called together an Assembly of Notables. This body decided in favor of monarchy; and a deputation was appointed to offer the crown of Mexico to M. After deliberation he solemnly accepted it; and 1864, June, he entered Mexico. He was of course warmly welcomed by the clergy and the army; but he soon found that they expected him to sanction abuses which he felt bound to condemn; though he gained the support of the liberals. He was supported by French troops; and for a time all went well; but he vainly tried to reconcile Mexican parties, who had no other object in view than power and place. A proclamation that he was induced to make 1865, Oct., threatening death under the laws of war to all who offered resistance to the government (asked for merely to suppress brigandage), was so employed both by the imperialist and French commanders that under it many estimable liberal officers were cruelly shot as robbers. Juarez and his followers again raised the standard of independence. At the same time, Louis Napoleon had to contemplate the necessary withdrawal of his troops. In vain Empress Carlotta, daughter of Leopold I. of Belgium, went to Europe to enlist support for her husband; her

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reason gave way under continued disappointment, grief, and excitement. The French were most anxious that M. should leave with their troops; and it had become evident that abdication was the only course open to him; still he felt bound as a man of honor to remain, and share the fate of his followers. At the head of 10,000 men he made a brave defense of Queretaro against a liberal army under Escobedo. 1867, May 15, he attempted to escape through the enemy's lines, but was captured. The liberal minister of war ordered M. and Generals Miramon and Mejia to be tried by court-martial; and it was in vain that the European ministers protested against this breach of the laws of civilized warfare. The course of the trial was determined from the first; the charges rested chiefly on the proclamation above referred to and the executions which had followed it. July 19, the three prisoners were shot. After some delay, the body of M. was given up to his relatives, and was conveyed to Europe in an Austrian frigate, and interred at Vienna in the imperial vault. After the death of M., his papers were published under the title of *Aus Meinem Leben; Reiseskizzen, Aphorismen, Gedichte*, etc. (7 vols. 1867).

MAXIMUM, n. *măks'î-măm* [L. *maximum*, the greatest]: the greatest number, quantity, or degree attainable in any given case; opposed to *minimum*, the smallest; the highest price as fixed by some law or regulation: **ADJ.** the greatest. **MAXIMIZE**, v. *măks'î-mîz*, to carry up to a maximum. **MAX'IMIZING**, imp. **MAX'IMIZED**, pp. *-mîzd*.

MAX'IMUM, in Mathematics: the greatest value of a variable quantity or magnitude, in opposition to *minimum*, the least. More strictly, a M. is such a value as is greater than those immediately preceding and following it in a series; and a minimum is a value which is less than those immediately preceding and following it; so that a function may have many maxima and minima unequal among themselves, as in the case of a curve alternately approaching and receding from an axis. Traces of the doctrine of maxima and minima are in the works of Apollonius on Conic Sections. The thorough investigation of them requires the aid of the differential calculus, and even of the calculus of variations. The brothers Bernouilli, Newton, Maclaurin, Euler, and Lagrange, greatly distinguished themselves in this department of mathematics. The Hindus have showed great ingenuity in solving, by ordinary algebra, problems of maxima and minima, for which, in Europe, the calculus was considered necessary.

MAXWELL, *măks'wěl*, **JAMES CLERK**:- one of the greatest of modern natural philosophers: 1831-1879, Nov.; only son of John Clerk-Maxwell of Middlebie, cadet of the old Scottish family of Clerk of Penicuik. He was educated in boyhood at the Edinburgh Academy. His first published scientific paper was read for him by Prof. Forbes to the Royal Soc. of Edinburgh before he was 15 years old, and when he had received no instruc-

tion in mathematics beyond a few books of Euclid, and the merest elements of algebra. He spent three years at the Univ. of Edinburgh, working with physical and chemical apparatus, and devouring all sorts of scientific works in the library. During this period he wrote two valuable papers, 'On the Theory of Rolling Curves,' and 'On the Equilibrium of Elastic Solids.' Thus he brought to Cambridge Univ., which he entered in the autumn of 1850, a mass of knowledge immense for so young a man, but in a state of disorder appalling to his private tutor. But by sheer strength of intellect, though with the very minimum of knowledge how to use it to advantage under the conditions of the examination, he obtained 1854 the position of second wrangler, and was equal with the senior wrangler in the higher ordeal of the Smith's prize.

In 1856 he became prof. of nat. philosophy in Marischal College, Aberdeen; 1860, prof. of physics and astronomy in King's College, London. He was successively scholar and fellow of Trinity; and was elected an honorary fellow of Trinity when he finally became, 1871, prof. of experimental physics in the Univ. of Cambridge. The Cavendish Laboratory, erected and furnished under his supervision, remains a remarkable monument to his wide-ranging, practical knowledge and theoretical skill. In clearness of mental vision, in power of penetration, and in the possession of that patient determination to which Newton ascribed all his success, M. is to be ranked with Faraday. He was too rapid a thinker to be a good lecturer, except for the very highest class of students.

The great work of his life is undoubtedly his treatise on *Electricity and Magnetism* (2 vols. 1873). He had from 1856 onward published various papers on these subjects, following closely the experimental procedure of Faraday. His great object was to construct a theory of electricity in which 'action at a distance' should have no place; and his success was wonderful. There can be little doubt that he has succeeded in laying the basis of a physical theory of electric and magnetic phenomena, as securely founded as is the undulatory theory of light: and the luminiferous ether, which is required for the one series of phenomena, is shown to be capable of accounting for the others also. One grand test is found in the fact that, if his hypothesis be correct, the velocity of light ought to be equal to the ratio of the electrokinetic unit to the electrostatic unit. We are not yet sure of either quantity to within two or three per cent.; but the most probable values of each agree so well as almost to put the hypothesis beyond doubt. In *Nature*, VII. 478, is an account of the more remarkable discoveries in this extraordinary book, which suffices to put M. in the front rank of scientific men.

Another subject to which he devoted much attention, and in which his numerous discoveries were acknowledged by the award of the Rumford medal, was the perception of color, the three primary color sensations, and

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the cause of color-blindness. He was the first to make color-sensation the subject of actual measurement.

He obtained the Adams prize from the Univ. of Cambridge for his splendid discussion of the dynamical conditions of stability of the ring-system of Saturn, in which he showed that the only hypothesis consistent with the continued existence of these rings is that they consist of discrete particles, each independently a satellite.

He was perhaps known to the public most by his investigations on the kinetic theory of gases, with their singular results as to the nature of gaseous friction, the laws of diffusion, the length of the average free path of a particle, and the dimensions of the particles of various gases. His Bradford 'Discourse on Molecules' is a classic in science.

Besides a great number of papers on various subjects, mathematical, optical, dynamical, he published an extraordinary text-book of the *Theory of Heat* (which has already gone through several editions) and an exceedingly suggestive little treatise on *Matter and Motion*. In 1879 he edited, with copious and very valuable original notes, *The Electrical Researches of the Hon. Henry Cavendish*, a work which shows that that remarkable man was a man of Clerk-Maxwell's own kind, and had (a hundred years ago) made out for himself much of what was till very lately deemed one of the chief triumphs of the 19th c.

Clerk-Maxwell obtained the Keith prize of the Royal Soc. of Edinburgh for a valuable investigation of stresses and strains in girders and frames; he was prominent in the construction of the British Assoc. Unit of Electrical Resistance, and in the writing of its admirable Reports on the subject; and he discovered that viscous fluids, while yielding to stress, possess double refraction. He was excessively ingenious in illustration, especially by diagrams; and possessed a singular power of epigrammatic versification, as the reader of *Nature* and *Blackwood* cannot fail to remember. Some of his last and very best scientific work adorns and enriches the ninth ed. of the *Encyclopædia Britannica*. He was singularly lovable, kindly, and sincere. In the full sense of the word he was a Christian; and he asserted that he had examined every form of atheism which he had met, finding that all ultimately required the recognition of the personal God. See *Life*, by Campbell and Garnett (1882).

MAXWELL, WILLIAM: revolutionary soldier: about 1735-1798, Nov. 12; of Irish origin. He served in the English army in America as early as 1758, to the close of the French war (1765), and during the greater part of the revolution. He was in the expedition of 1776 to Canada as col. commanding a N. J. battalion; was made brig.gen. by congress 1776, Oct. 23; took part in the battles of Brandywine and Germantown, commanding a N. J. brigade; was in the pursuit of Clinton; had a prominent part in the battle of Monmouth; shared in the expedition of Sullivan against the N. Y. Indians 1779; was in the battle of Springfield 1780. June 20.

MAY.

MAY, v. *mā* [Goth. *magan*; Icel. *mega*; Sw. *ma*, to be able]: an auxiliary verb expressing liberty, desire, or wish; to be able; to be free to act; to be possible, as it *may* be so; to be permitted or allowed; to be by chance, as how old *may* he be. **MAYBE**, perhaps; by chance. **MIGHT**, pt. *mīl*.

MAY, n. *mā* [Lat. *Maius*, prob. from a root *mag*, or Skr. *mah*, to grow]: fifth month of our year; third of the old Roman calendar; so named as being the month of growth. It comprises 31 days. The derivation of the name from Maia, mother of Mercury, is not tenable, for the name was in use among the Romans before they knew anything of either Mercury or his mother. **MAY'-ING**, n. a celebration of May 1. **MAY-BLOSSOM** or **-FLOWER**, in England, the hawthorn-flower: in the United States, the Trailing Arbutus (see *EPIGÆA REPENS*). **MAY-BUG**, the chafer. **MAY-DAY**, first day of May. **MAY-DEW**, dew gathered on May-day. **MAY-DUKE**, variety of cherry. **MAY-FLY**, fly appearing in May (see *EPHEMERA*). **MAY-MORN**, freshness; vigor. **MAY-POLE**, a pole round which dances are held on May-day. **MAY-QUEEN**, girl crowned with flowers on May-day.—*May* has been generally regarded as a time for gladness. The outbreak into new life and beauty which marks nature, instinctively excites. The first emotion is a desire to seize some part of that profusion of flower or blossom which spreads around, to set it up in decorative fashion, and to let the pleasure which it excites find expression in dance and song; and among pagans the tendency has been to render to this vegetative trophy a sort of homage. Among the Romans, the feeling of the time found vent in their *Floralia*, or Floral Games, which began Apr. 28, and lasted a few days. May 1—**MAY-DAY**—was the chief day in the ancient and more modern festival. Among the old Celtic peoples, a festival called *Bellein* (q.v.) also was held on this day, but it does not seem to have been connected with flowers. In England, as we learn from Chaucer and other writers, it was customary, during the middle ages, for all, both high and low—even the court itself—to go out on the first May morning at an early hour 'to fetch the flowers fresh.' Hawthorn (q.v.) branches also were gathered; these were brought home about sunrise, with accompaniments of horn and tabor, and all possible signs of joy and merriment. The people then proceeded to decorate the doors and windows of their houses with the spoils. By a natural transition of ideas, they gave the hawthorn bloom the name 'the May;' they called the ceremony 'the bringing home the May;' they spoke of the expedition to the woods as 'going a-Maying.' The fairest maid of the village was crowned with flowers as the 'Queen of the May;' placed in a little bower or arbor, where she sat in state, receiving the homage and admiration of the youthful revellers, who danced and sang around her. This custom of having a May queen seems a relic of the old Roman celebration of the day when the goddess Flora was

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especially worshipped. How thoroughly recognized the custom had become in England may be illustrated by the fact that in the reign of Henry VIII. the heads of the corporation of London went out into the high grounds of Kent to gather the May—the king and his queen, Catharine of Aragon, coming from their palace of Greenwich, and meeting these respected dignitaries on Shooter's Hill. But perhaps the most conspicuous feature of these festive proceedings was the erection in every town and village of a fixed pole—the May-pole—as high as the mast of a vessel of 100 tons, on which, on May morning, they suspended wreaths of flowers, and round which the people danced in rings nearly the whole day. A severe blow was given to these merry and often wild revels, by the Puritans, who caused May-poles to be uprooted, and a stop put to all their jollities. They were, however, revived after the Restoration, and long held their ground; but they have now almost disappeared. In France, Germany, and other countries, May-poles were common, and festive sports are even yet observed.—In the Rom. Cath. church, May is known as 'the month of Mary,' being dedicated to the Virgin mother.—See Chambers's *Book of Days*, I. 569–582.

MAY, SAMUEL JOSEPH: Unitarian preacher and anti-slavery philanthropist: 1797, Sep. 12—1871, July 1; b. Boston. A graduate of Harvard, 1817, and of the Cambridge Divinity School, he was ordained, Boston, 1822, Mar. 14, and settled over a Unitarian church in Brooklyn, Conn.; heard, and was converted by, Garrison's earliest anti-slavery lectures in Boston 1830, Oct. 14, 15, and 18; assisted, 1831, Nov. 13, to found the New England Anti-slavery Soc.; was a member 1833, Dec. 4–6, of the convention at Philadelphia which formed the Amer. Anti-slavery Soc. and signed its 'Declaration of Sentiments'; 1835–36 lectured as agent of the Mass. Anti-slavery Soc. became pastor in S. Scituate, Mass., 1836; took leading part in a peace convention, Boston, 1838, but could not sign the non-resistance 'Declaration'; 1842 took charge of Mass. State Normal School at Lexington; three year later became pastor of Unitarian church in Syracuse, N. Y., and there resided until his death. On account of feeble health he resigned his ministry 1868, but continued active as a missionary in central N. Y. His participation in the rescue of the slave 'Jerry,' at Syracuse 1851, Oct. 1, led to the finding of an indictment against him at Auburn, N. Y. His bail-bond was signed by Wm. H. Seward, and no trial was had. During the civil war M. was conspicuous in labors for the Union soldiers. He was throughout life a most earnest, judicious, and effective supporter of all charitable, educational, and reform movements; a man of warm sympathies and unfailing cheerfulness; just, brave, and gentle. At his death in Syracuse, Jews, Rom. Catholics, and every Prot. denomination, paid public tribute to his Christian excellence. He pub. *Recollections of the Anti-Slavery Conflict*.

MAYA—MAYAS.

MAYA, *mā'yâ*: in the Purânic mythology of the Hindus, femininely personified will or energy of the Supreme Being, who, by her, created the universe; and as, in this later doctrine, the world is unreal or illusory, M. assumes in it the character of Illusion personified. In this sense, M. occurs also in the *later* Vedânta philosophy, and in some of the sectarian philosophies of India.

MAY'-APPLE: see PODOPHYLLUM.

MAYAS *mâ'yas* or *mī'as*, THE: an Indian race of Yucatan, the peninsular s.e. extremity of Mexico, formerly, with the kindred Quiché people, a wide-spread family, with a civilization which rivalled the culture of the Peruvian, Aztec, and Toltec peoples. The older views, and to some extent the later (Charnay), treat the Maya culture and monuments as of Toltec origin; but against this conclusion stand too many evidences of the antiquity and independent origin of the Maya-Quiché civilization. The entire n. section of Yucatan was once the Maya seat of empire, and the home of a flourishing civilization, systematically watered by artificial lakes and underground reservoirs, rivalling the water supply systems of Peru, Egypt, and Babylon.

Merida, present cap. of Yucatan, stands on the ruins of one ancient city, with those of seven others about it, in the n.w. corner of the peninsula. One of these, Mayapan, the greatest Maya city, had been overthrown a hundred years before the Spanish conquest by the revolt of feudatory states. Of such ruined cities more than 60 are known, almost unexampled monuments of a dead and buried civilization.

Fully five-sixths of the population of Yucatan are of nearly pure Maya stock. They show coarse black and straight hair, arched noses, and reddish-brown complexion, as in other American aborigines, but are distinguished from all other Indians by their regular features, low cheek-bones, small mouth and ears, straight jaws, frank expression, and an air of refinement indicating a highly cultured ancestry (Keane), a race rivalling, in build, intelligence, and expression, most of the rural classes of Europe (Charnay). Since a general uprising of the mass of the natives (1846), the ruling classes, putting down the revolt by Mexican aid (1847-53), have joined with Mexico, while large numbers of the ruder natives maintain, on the coast lands beyond the Sierra Alta, a savage independence, and make ravaging expeditions northward. They are ruled by a queen who resides at Chan Santa Cruz, not far inland from Belize. Although fast relapsing into heathenism, they keep some vestiges of Christian ceremony, especially reverence for the cross. Spanish iconoclastic zeal nearly destroyed the Maya literature, but a Spanish *Relacion* of the conquest period has been found (1865), and with some relics of the language, letters, and religion of old Maya days, a considerable study is now possible of the most remarkable known Indian race.

MAYBOLE—MAYER.

MAY'BOLE: burgh of regality, in the county of Ayr, Scotland, 9 m. s. of the town of Ayr, on the Ayr and Girvan railway. The people are mostly shoemakers and weavers. In feudal times it was considered the cap. of Carrick. In the vicinity are the ruins of the famous Abbey of Crossraguel, the head of which, at the time of the Reformation, was Quentin Kennedy, who held a public disputation with John Knox in the town of Maybole. Pop. (1881) 4,474, (1891) 5,467.

MAYENCE': see MAINZ.

MAYENNE, *mâ-yě'n'* (Lat. *Meduana*): river in n.w. France, which rises in the dept. of Orne, and after being joined on the right by the Varenne, Calmont, Ernée, and Oudon, on the left by the Jouanne and Ouette, debouches at Pont de Cé into the Loire under the name of the Maine, having become navigable 50 m. south of Mayenne. —This river gives its name to the dept. of Mayenne.

MAYENNE': department in n.w. France, formed from the w. part of the old province of Maine and the n. of Anjou; 1,990 sq. m. M., included almost entirely within the basin of the Loire, has a mild climate, but only a partially productive soil, being occupied in many districts by extensive sandy heaths. The chief branches of industry are breeding of cattle and sheep, and rearing of bees; while the iron mines and marble quarries of the district employ the poorer classes. The linen, hemp, and paper manufactures are of some importance. M. is divided into three arrondissements, Laval, Château-Gontier, and Mayenne. Pop. (1901) 313,103.

MAYENNE': chief town of the French dept. of M., on the Loire, on the right bank of which rises, on a steep and rocky height, the ancient fortress of the dukes of Mayenne; lat. 48° 14' n., long. 0° 35' w. The town is pleasantly situated, has several good squares, and some fine fountains; but it is remarkable specially for the extreme steepness of its narrow and winding streets. There are manufactures of calico and linen. Pop. (1891) 9,369.

MAYER, *mā'ér*, ALFRED MARSHALL: born Baltimore, 1836, Nov. 13. He studied at St. Mary's Coll., Baltimore; was specially trained in mechanical engineering (1852-54), and in analytical chemistry (1854-56); prof. physics and chemistry, Univ. of Md. 1856-59; of the same at Westminster Coll., Mo., 1859-61; studied at Univ. of Paris, physics, mathematics, and physiology; prof. Penn. Coll., Gettysburg, 1865-67; at Lehigh Univ., Penn., 1867-70; prof. in Stevens Institute, Hoboken, N. J., after 1871. Prof. Mayer published valuable papers of *Researches in Acoustics* (1871-75); *On the Minute Measurements of Modern Science* (1876-78); also *Lecture Notes on Physics* (1868); *The Earth a Great Magnet* (1872); *Light* (1877); *Sound* (1878); *Sport with Gun and Rod* (1883), and special memoirs and articles. Died 1897, July 14.

MAYER—MAYHEW.

MAYER, *mī'ér*, JOHANN TOBIAS: German mathematician and astronomer: 1723, Feb. 17—1762, Feb. 20; b. Marbach, Würtemberg. He was self-educated chiefly, at Esslingen; at the age of 22 published original studies in geometry; engaged in improved map-making in Nuremberg, 1746–50; published, 1750, a greatly improved account of the librations of the moon, which Lalande's *Astronomy*, 20th book, copied almost entire; elected prof. of economy and mathematics, Univ. of Göttingen, 1751; and (1754) became supt. of the observatory. He produced a very valuable catalogue of 998 zodiacal stars, each observed from 4 to 26 times, and of others less often noted. His fame rests chiefly on his lunar tables, pub. 1753 with new solar tables, and sent to England 1755, to compete for the prize offered by parliament for a method of finding long. at sea. After his death a grant of £3,000 was made to his widow. He is credited with the first definite attempt to establish a math. theory of magnetic action, and with other important discoveries.

MAY'HEM (MAIM): see BEATING AND WOUNDING. ASSAULT.

MAYHEW, *mā'hū*, EXPERIENCE: missionary to the Mass. Indians: 1673, Jan. 27—1758, Nov. 29; b. Martha's Vineyard; son of John M., and great-grandson of Gov. Thomas M. He succeeded to the charge of five or six Indian congregations, 1694, Mar., and carried on a remarkable work of instruction and conversion of the natives, with whose language he had been familiar from childhood. He translated the gospel of John for his converts, and made a new version in their tongue of the psalms (1709). In his *Indian Converts* (1727), he gave an account of 30 Indian preachers, and 80 other native men, women, and children. He published *Grace Defended*, 1744, in opposition to new views then advanced. He was made M.A. by Harvard Coll. 1720.—His son, ZACHARIAH M. (1717–1806) carried on the Indian mission work from 1767 to his death.

MAY'HEW, JONATHAN, D.D.: 1720, Oct. 3—1766, July 9; b. Martha's Vineyard, Mass.; son of Experience M.: a patriot and rationalist minister of Boston, Mass., in the pulpit of the West Church, from 1747, June, to his death. He graduated from Harvard Coll. 1744, and was notable for learning and literary ability. He adopted new opinions which would now be classed as evangelical Unitarian, and which led to his exclusion from the Boston ministerial association, though in a later generation these opinions became prevalent in that body. Dr. M. was a most ardent and powerful political preacher and writer, and died at the age of 46, overtaxed by zealous labors on behalf of the liberties of the colonies. He did much to prepare the way for the Revolution. His last word from his death-bed was a letter to James Otis (q.v.) strongly urging the union of the colonies. His church, among whose pastors have been Dr. Chas. Lowell and Dr. Cyrus A. Bartol, has become extinct,

MAYHEW—MAYNOOTH.

MAYHEW, THOMAS: 1592, Mar.—1682, Mar. ; b. England: Puritan merchant of Southampton, Eng.; emigrant to New England 1631, an early resident of Watertown, Mass. In 1641 he received from Lord Stirling a grant of land, and the office of gov., on Martha's Vineyard (q.v.), and from 1642, with the aid of his son, Thomas M., as minister, prosecuted for 40 years a most remarkable work of Indian instruction and elevation, even preaching himself at the age of nearly 70, after the death of his son.—His son, **THOMAS M.** (1621–57), b. Southampton, England, gathered a church of Indian converts which in 1662 numbered 282. He joined John Eliot in preparing *Tears of Repentance, or a Narrative of the Progress of the Gospel among the Indians in New England* (London, 1654).

MAYKOP, mī'kōp: town of the Russian province of Kuban, in the Caucasus; on a tributary of the Byelaya river; formerly a fortified Cossack vill. and centre for milit. operations against the w. Caucasus; now a prosperous agricultural and trade centre, owing to the abundance of fertile lands in the vicinity available to Russian settlers. Pop. (1886) 27,945.

MAYMEME, or MAIMENAH: city of Independent Turkestan, about half way between Balkh and Herat, on a river flowing n. toward the Jihun. It consists of about 1,500 mud huts, a frail bazaar of brick, three mosques of mud, and two *medresse*, or colleges, of brick. It is considered by the natives a powerful stronghold, but its only defenses are a simple wall of earth around the city, 20 ft. high; and a citadel surrounded by a fosse, up a conspicuous hill of steep ascent. The people of the town and of the khanat, are bold and fearless riders, and of resolute, warlike character.

MAYNOOTH, mā'nôth: village of county Kildare, Ireland, 15 m. n.w. from Dublin by the Midland Great Western railway: pop. including the college (1881) 1,174. It is of some historical interest as the seat of the powerful family of the Geraldines, of whose castle, demolished during the Cromwellian wars, large and impressive ruins remain; and as the scene of more than one struggle with the English power. The Royal Catholic College of M., instituted by the Irish parliament 1795, a Roman Catholic seminary, for the priesthood, was the occasion of controversy in Great Britain for many years. It met a necessity created by the utter destruction, through the French Revolution, of the places of education in France on which the Irish Rom. Cath. clergy, excluded by the penal laws from the opportunity of domestic education, had previously relied. The original endowment, an annual vote of £8,928, was continued by the imperial parliament after the act of union, though not without sustained opposition. In 1846 Sir Robert Peel carried a bill for a permanent endowment of £26,000 a year, to which was added a grant of £30,000 for building purposes. The building erected under the original endowment is a

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plain quadrangle. The new college is a very striking Gothic quadrangle by Pugin, containing professors' and students' apartments, lecture-halls, and a singularly fine library and refectory. Pugin's design included a chapel and common-hall, which, in lack of funds, have been postponed. Under the act of 1845, the college was to receive 500 students, all destined for the priesthood. The full collegiate course was of eight years, two in classics, two in philosophy, and the remaining four in directly professional studies of divinity, scripture, church history, canon law, and the Hebrew and Irish languages. The divinity students, 250 in number, received a money stipend of £20 annually; and at the close of the ordinary course, 20 scholarships, called from the founder, 'Dunboyne Scholarships,' were assigned by competition to the most distinguished students, and might be held for three years. The legislative authority was vested in a board of 17 trustees, and the internal administration in an academical body, consisting of a pres. and vice-pres., with a numerous body of professors and deans. A visitorial power was vested in a board of 8 visitors, of whom 5 were named by the crown, and 3 elected by the trustees. In 1869, by the Irish Church Act at the disestablishment, the Maynooth endowment was withdrawn—a capital sum, 14 times its amount being granted to the trustees for discharge of existing interests. The college, however, is still maintained on the same footing. The educational arrangements are unaltered and though the number of pupils, owing to the suspension of free studentships and exhibitions, has somewhat fallen off, the diminution is regarded as temporary. The former visitorial powers under the act of parliament are now exercised by visitors appointed by the trustees, and all state connection is at an end. The college also possesses, through donation and bequest, some landed and funded property, the most considerable of which is that of Lord Dunboyne, Rom. Cath. Bishop of Cork, who had for a time conformed to the Prot. faith. 1878, Nov., a great part of the college buildings was burned.

MAYO, *mā'ō*: maritime county of the province of Connaught, Ireland; bounded n. and w. by the Atlantic Ocean; e. by Sligo and Rosecommon, s. by Galway: 1,363,882 acres, of which 497,587 are arable. Pop. (1861) 254,769; (1871) 241,768; (1881) 245,212; (1891) 219,034. The soil of the plain is fertile and for the most part suitable for tillage or pasture, though the prevalence of rain and ungenial winds renders tillage precarious. The surface of the county is very irregular; the highest points are Croagh Patrick, 2,610 ft., and Nephin, 2,656 ft. The chief towns are Castlebar, Westport, Ballina, and Ballinrobe. The coastline of M. is about 250 m. In the river Moy there is valuable salmon-fishery, and the small lake Lough Mask is the habitation of the well-known 'gillaroo' trout. The Irish language is still spoken in Mayo. Pop. (1891) 218,406.

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M. formed part of the extensive territory granted by Henry II. to William de Burgho; but in the middle of the 14th c., one of the younger branches of the family, seizing on the counties of Galway and M., threw off the English allegiance, adopted the 'customs of the Irishry,' together with the Celtic name of MacWilliam. In 1575 the MacWilliam made his submission at Galway; but having subsequently revolted, the district was finally subdued by Sir Richard Bingham 1586. The antiquities of M. are chiefly ecclesiastical. Four round towers are still standing, and there are at Cong the remains of a splendid abbey of the 12th c. The celebrated 'Cross of Cong,' now in the Museum of the Royal Irish Academy, was the archiepiscopal crosier of Tuam, formerly preserved in the abbey of that name.

MAY'O, AMORY DWIGHT: b. 1823, Jan. 31, Warwick, Mass: Unitarian minister and educationalist. He studied at Amherst Coll. 1843-4, and was a student of theology with the Rev. Hosea Ballou; was pastor of a Universalist church at Gloucester, Mass., 1846-54; Cleveland, O., 1854, Oct.—1855, Dec.; Albany. N. Y., 1856, Jan.—1862, Dec. He was in the Unitarian ministry in Cincinnati, O. (Church of the Redeemer), 1863, Jan.—1872, July; Springfield, Mass. (Church of the Unity), 1872, Nov.—1879. He was an active member of the school boards of Cincinnati, O., and Springfield, Mass., during 15 years; and was for six years associate ed. of the *National Journal of Education* (Boston), and a vigorous contributor to periodicals. Since 1879 Mr. M. has turned his large experience to the service of education in the s. states, by courses of lectures in many places every year, and giving aid and counsel toward improvement or new organization of schools. He has published *The Balance* (1847); *Graces and Powers of the Christian Life* (1850); *Symbols of the Capitol* (1859); *Religion & Common Schools* (1869) and *Talks with Teachers* (1878).

MAYOR—MAYOR OF THE PALACE.

MAYOR, n. *mā'ér* [OF. *maieur*; F. *maire*, the chief magistrate of a town—from L. *majōrem*, greater; in mid. L. *maj'ōrem*, chief man of a city: comp. Gael. *maor*, an officer of justice]: the chief magistrate of a city or corporate town. **MAYORALTY**, n. *mā'ér-āl-tī*, the office of a mayor; also the time during which he holds the office. **MAY'ORESS**, n. *-ér-ēs*, the wife of a mayor.

MAY'OR: originally a steward, bailiff, or overseer, thence the chief magistrate of a city or corporate town. The mayor is the head of the local judicature, and the chief executive officer of the municipality: in England he is elected by the council from the aldermen or councillors, and holds office for a year only; in the United States he is elected usually by popular vote. His powers vary according to the charters of the various cities, and are liable to annual changes by the legislature of the state. Thus in some cities the mayor's powers are great; in others they are divided with executive boards, or dependent on confirmatory action by aldermen or common council.—The first mayor of London was appointed 1189, the first mayor of Dublin 1409. The mayors of London, York, and Dublin are called 'Lord Mayor.' The Lord Mayor of London has the title 'Right Honorable,' which, with the title 'Lord,' was allowed first by Edward III. 1354: he is the representative of royalty in the civil government of the city, the chief commissioner of lieutenancy, the conservator of the river Thames; and on the demise of a sovereign, he becomes, *pro tempore*, a member of the privy council. To sustain the hospitality of the city, he receives an allowance of £8,000 a year, with the use of the Mansion-house, furniture, carriages, etc. He is chosen by the Livery (q.v.) Sep. 29, being usually the senior alderman, who has been sheriff, but not Lord Mayor. In former times, it was the ambition of the first merchants and bankers of the City to become Lord Mayor; but since the district within the metropolitan boundaries has come to be but a small fraction of what is generally known as London, this has ceased to be the case; and it is only in other than English eyes that the Lord Mayor of London is one of the important public functionaries of the realm.

MAYOR OF THE PALACE: title borne by stewards of the household and estates of the early Teutonic kings of France. Elected by the nobles, and acting from real authority, they came at length to have all power, reducing the nominal kings to idle royalties, *rois fainéants*. Pepin of Héristal was thus absolute master of the several Frankish kings, and of all France (688–714). His natural son, Charles Martel, gained like power after him; and his son, Pepin (or Pippin) the Short, took for himself the title of king, founded a dynasty, and left his son Charles-magne to become emperor of the west.

MAYOTTA—MAZANDARAN.

MAYOTTA, *mâ-yô't'a*: one of the Comoro Isles (q.v.), ceded to France 1843; lat. $12^{\circ} 34'$ — $13^{\circ} 4'$ s., and long. $44^{\circ} 59' 15''$ — $45^{\circ} 23'$ e. It is of irregular form, 21 m. from n. to s., average breadth six or seven m.: if, however, the dangerous coral reefs which surround the island be included, the whole occupies a space 30 m. n. and s. and 24 m. e. and w.. The surface of M. is very uneven, and is studded with volcanic-looking peaks, some of which exceed 2,000 ft. in height. The shores of the island are in some places lined with mangrove swamps, uncovered at low water, and productive of malaria and fever. The island is in most parts capable of cultivation, and contains several sugar plantations, producing annually 40,000 to 50,000 cwts. of sugar; total exports for a year valued at nearly \$250,000. It is principally sugar that is exported; and the supply of food grown on the island is insufficient for the inhabitants. The total imports in a year do not exceed in value \$125,000. As a colony M. has certainly not fulfilled the expectations entertained by the French at the time of its occupation, notwithstanding the unusually liberal terms held out to colonists. The French establishment is on the island of Zaondzi, inside the chain of reefs on the e. side of M., and consists of a gov., colonial officer, some artificers and seamen, and about 100 soldiers, besides a few native ones. There are several substantial govt. buildings and storehouses; there is a good roadstead, and the fort has been recently fortified. M. is the only refuge for French ships in the Indian Ocean. It is the principal market for the neighboring islands. Pop. (1881) 10,800; (1898), 11,640.

MAYSVILLE, *māx'vīl*: city, cap. of Mason co., Ky., on the s. bank of the Ohio river, and the Kentucky Central railroad, 63 m. s.e. of Cincinnati, 69 m. by rail n.e. of Lexington, Ky. It is finely situated, is the river-port of a rich territory, and one of the largest hemp-marts in America. It has extensive manufactories of cotton, hemp, tobacco, iron, and coal-oil. It contains the county buildings, city hall, market, 2 national banks (cap. \$410,000), and 1 state bank (cap. \$100,000), 4 newspapers, 12 churches. M. was settled 1784, incorporated 1833. Pop. (1880) 5,220; (1890) 5,358; (1900) 6,423.

MAY'-WEED (*Maruta Colula*): common plant in pastures and meadows and on roadsides, in Europe and America. The flower is like that of chamomile (genus *Anthemis*), and the plant is called sometimes Stinking Chamomile: the two genera are occasionally confounded. M.-W. is of ord. *Compositæ*.

MAZAMET, *mâ-zâ-mā'*: town of France, dept. of Tarn, 43 m. e.s.e. of Toulouse, on the Arnette, a feeder of the Tarn. It has extensive woolen manufactures and cloth-fairs. Pop. (1896) 13,712.

MAZANDARAN, *mâ-zân-dâ-rân'*: province of n. Persia, bounded n. by the Caspian Sea. It consists mostly of a tract of low coast-land, about 220 m. long by 60 broad.

MAZARD—MAZARIN.

Along the shore of the Caspian, the land is marshy; further inland, the surface becomes elevated. The climate is not salubrious, though it is more healthful than that of the neighboring province of Ghilan; and the elevated portion, culminating in the Demarand (18,600 ft.) is quite salubrious. The soil is fertile; rice, cotton, mulberry, sugar-cane, and a variety of fruits, are produced. It exports silk, cotton, and rice to Russia, and imports woolen goods, cutlery, tobacco, etc. Cap. Sari (q.v.). Through the whole province, parallel with the shores of the Caspian, extends a causeway, constructed by Shah Abbas the Great in the 17th c., and still in good repair. Pop. about 150,000.

MAZARD, *măz'êrd*: a variety of black cherry.

MAZARD: see under MAZER.

MAZARIN, *măz-a-rên'*. F. *mâ-zâ-răng'*, JULES (Ital *Giulio Mazarini*): cardinal and chief minister of France during the minority of Louis XIV.: 1602, July 14—1661, Mar. 9; b. Rome, or, some say, at Piscina in the Abruzzi. The social position and occupation of his father are points in dispute. M. was educated by the Jesuits at Rome till his 17th year, and then studied law at Rome and at the Spanish universities, where he contrived to unite industry with amorous gayety. Afterward, he entered the pope's military service, perhaps about 1624. Having accompanied a papal legate to the court of France, he became known to Richelieu about 1628, who perceived his great political talents, and engaged him to maintain the French interests in Italy, which he did while still employed by the pope as vice-legate to Avignon (1632), and nuncio to the French court, an office to which he was appointed 1634. The Spaniards complained of his partiality for France, and the pope was obliged to recall him. The subtle Italian was not thus to be checkmated. In 1639, he openly entered the service of Louis XIII., and was naturalized a Frenchman; and in 1641—though not a priest, and having received only minor orders—received a cardinal's hat, on the presentation of the king of France, through the influence of Richelieu, who, when dying, recommended M. to the king as the only person capable of carrying on his political system. At the death of Richelieu, 1642, M. was made supreme minister. The king died 1643, and M.'s position was one of great difficulty amid the intrigues, jealousies, and strifes of the earlier years of Louis XIV.'s minority. The queen-mother, Anne of Austria, had been deemed hostile to him; but though she was declared sole regent and guardian of the young king, M. kept his place as minister, and soon made himself indispensable to her, partly by his wonderful business qualities, and still more by the exquisite charm of his manner, so that, although with greater smoothness, he ruled with almost as unlimited a sway as Richelieu. Already indeed, in anticipation, he had contrived to touch the queen's heart with his Spanish gallantry. The parliament,

thinking to regain political power, resisted the registration of edicts of taxation; but M. caused the leaders of the opposition to be arrested, upon which the disturbances of the Fronde (q.v.) began. The court retired to St. Germain; M. was outlawed by the parliament; but by the truce of Ruel, he still remained minister. The feeling against him, however, became still more inflamed, when, at his instigation, the queen-regent caused the Princes of Condé and Conti and the Duke of Longueville to be arrested 1650, Jan. M. went in person at the head of the court troops to the insurgent provinces; and after the victory at Réthel, showed so much insolence, that the nobles and the people of the capital made common cause against him, and he thought it necessary to secure his safety by flight to the Netherlands, while the press teemed with violent publications against him, known as *Mazarinades*. After the rebellion of the Prince of Condé, he ventured to return to France; but Paris making his removal a condition of its submission, he retired again from the court 1652, Aug., and it was not till 1653, Feb. 3, that he made a triumphant entry into the capital, where he was received with significant silence. Yet in a short time he was again popular, and had acquired his former power. M.'s foreign policy was strong and successful; under it the influence of France among the nations was increased; but in the internal government of the country those principles of despotism were established on which Louis XIV. afterward acted. The administration of justice, however, became very corrupt, and the commerce and finances of the country sank into deep depression. It is admitted that as a financial administrator he was far inferior to Richelieu. M. died at Vincennes. M. was a man whose adroitness and address rose to the height of genius. He was very niggardly and very avaricious, and had acquired in various ways, fair and foul, an immense fortune, amounting to 12,000,000 livres, which he offered to the king shortly before he died; afraid, it is thought, that it might be rudely seized from his heirs. Louis declined the restitution, which was perhaps what the wily minister expected. The assertion that he was privately married to the queen, Anne, is open to some question, though probably true. See the *Memoirs* of M.'s contemporaries, Retz, Madame Motteville, La Rochefoucauld, Turenne, Grammont, etc.; *Siècle de Louis XIV.*, by Voltaire; *Mme. de Longueville*, etc., by Victor Cousin; and A. Renée's *Les Nièces de Mazarin*.

MAZARINE, n. *măz'ă-rēn'* [said to be after Cardinal *Mazarin*]: a deep-blue color; a method of dressing fowls; a little dish set in a large one. MAZARINE BIBLE, edition of the Latin Vulgate discovered in the library of Cardinal Mazarin. It was from this that John Gutenberg printed the first book in the production of which cut metal types were used, 1450-55. MAZ'ARINE' GOWN, n. the gown of mazarine blue worn by a common councilman, in some European cities.

MAZARRON—MAZEPPÁ.

MAZARRON, *mâ-thâr-rôn'*, or **ALMAZARRON**, *âl-*: seaport town of Spain, province of Murcia, 27 m. w.s.w. of Cartagena, on the coast of the Mediterranean. The inhabitants are employed in fishing and mining—silver ores and alum being found in the neighboring hills. Much barilla is made here. From the number of ruins found in the vicinity, this is supposed to have been the site of an important Carthaginian settlement. Pop. about 11,000.

MAZATLAN, *mâ-sât-lân'*: seaport of Mexico, at the mouth of the river M., which falls into the entrance to the Gulf of California, lat. 23° 10' n., long. 106° 21' w. It is a well-built and picturesque town. The climate is healthful, but very hot (85° to 105° in the shade during Aug.). The people are a mixed race of old Aztec Mexicans, Indians, Spaniards, and negroes. The chief exports to California and Europe are silver dollars, Brazil or Lima wood, and copper; imports are provisions, machinery, British hardware and crockery, and dry goods from France and Germany. In 1864, the town was besieged by the French and imperial troops. The harbor of M., though much exposed to winds from the s.w., is the most important on the w. Mexican coast; and the port is often visited by American and English vessels. Pop. 12,000 to 15,000.

MAZDEISM, n. *măz'dē-izm* [from *Ahuró-Mazdáo*, Har-musd, the good god of the Persian system—from Zend *ahur*, lord; *mazda*, wise, a sage]: a name for Zoroastrianism: see ZOROASTER: PARSEES. **MAZ'DEAN**, a. *-an*, pertaining or relating to Mazdeism.

MAZE, n. *măz* [from incoherent senseless chatter being the most obvious symptom of a confused or unsettled mind—Swiss, *mausen*, to speak unintelligibly: Icel. *masa*, to jabber, to chatter: Norw. *masast*, to begin to dream]: a network of paths contrived to perplex those who enter it, and hinder their finding the way out; a perplexed state of things; confusion of thought; a labyrinth; intricacy; in *OE.*, a labyrinth trodden or cut on turf by schoolboys: V. to bewilder; to perplex; to amaze. **MA'ZING**, imp. **MAZED**, pp. *măzd*: **ADJ.** confused in thought; silly. **MAZY**, a. *mă'zĩ*, perplexed; intricate. **MA'ZILY**, ad. *-lĩ*. **MA'ZINESS**, n. *-zĩ-nēs*, intricacy; perplexity.

MAZE, n. *măz*, or **MESE**, n. *mēz* [Icel. *meis*, a bag for carrying fish]: in *Scot.*, 500 herrings.

MAZEPPA, *mâ-zěp'pâ*, **IVAN** ('JOHN') **STEPHANOVICH**: hetman of the Cossacks: 1644–1709; b. Mazepintzui, in Podolia; descended of a poor but noble family. He became a page in the service of John Casimir, King of Poland. A Polish nobleman having surprised him in an intrigue with his wife, caused him to be stripped naked, and bound upon his own horse, lying upon his back, and with his head to its tail, and sent the animal off, leaving M. to his fate. The horse carried him to his own distant

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residence—not to the Ukraine, as has been often said; the peasants released him half-dead, and revived him; but M., out of shame, fled to the Ukraine, joined the Cossacks, and by his strength, courage, and activity, rose to high distinction among them, and 1687 was elected their hetman. He won the confidence of Peter the Great, who loaded him with honors, and made him Prince of the Ukraine; but on the curtailment of the freedom of the Cossacks by Russia, M. conceived the idea of throwing off the sovereignty of the czar, and for this purpose entered into negotiations with Charles XII. of Sweden. These and other treasons were revealed to Peter the Great, who did not credit the informants; but afterward, being convinced of M.'s guilt, caused a number of his accomplices to be put to death. M. joined Charles XII., and took part in the battle of Pultowa, after which he fled, 1709, to Bender, and there died, ending his life by poison. His story has been made the subject of a poem by Byron, of a novel by Bulgarin, of two paintings by Vernet, and of a masterly historical work by Kostomaroff (1882).

MAZER, n. *mă'zêr* [OHG. *masen*, a spot, a scar: Dut. *maese*, a spot, a stain: Bav. *maser*, a knotted excrescence on a tree]: in OE., a broad standing-up cup or drinking-bowl—so called because made of wood having a spotted or speckled grain. MAZARD, n. *măz'érd*, a burlesque word for the head or skull—from its likeness to a bowl: V. to knock on the head; to brain one. MAZ'ARDING, imp. MAZ'ARDED, pp. -*érd-éd*.

MAZUFURABAD, *má-zűf-fűr-â-bád'*: town of India, in the Punjab, about 200 m. n.n.w. of Lahore, at the confluence of the Jhelum and its great tributary, the Kishengunga, over both which rivers there are ferries. It is of importance chiefly for its commanding position at the entrance of the Baramula Pass into Cashmere. Emperor Aurungzebe built a fort here, subsequently replaced by one of greater strength, erected by the Afghan gov., Ata Mahomed.

MAZURKA, n. *mă-zűr'kű* [said to be named after *Mazovia*, in Poland, where it originated]: Polish dance of grotesque sort, resembling the Polonaise, but with more varied and lively movements: its music is sometimes in $\frac{2}{8}$ time, but usually in $\frac{3}{4}$. The peculiarity of the rhythm, which has a pleasing effect, characterizes the music of the M. It is danced by four or eight pairs, and is much practiced in n. Germany, as well as in Poland.

MAZZARA, *mât-sâ'râ*, DEL VALLO: city of the island of Sicily, 26 m. s. of Trapani, in a fine plain on the sea-shore. It is inclosed by walls, and has a cathedral, an episcopal palace, a college, and several convents. It has considerable trade in cotton, which is extensively grown in the neighborhood. Pop. 13,000.

MAZZARINO, *mât-sâ-rě'nō*: town of Sicily, in the fertile province of Caltanissetta, 15 m. s.e. of the town of that name. Pop. 11,600.

MAZZINI.

MAZZINI, *mât-sē'nē*, GIUSEPPE: Italian republican patriot: 1805, June 22—1872, Mar. 10; b. Genoa; son of a physician of note. His mother is reputed to have been remarkably beautiful, intellectual, and affectionate. In youth, M. was noted for warmth of friendship, fixity of will, and exaggerated susceptibility of his humane feelings. In childhood his health was exceedingly delicate. He received sentiments of social equality from the example and teaching of his parents; and very early the degraded political condition of his country began to prey upon his mind, producing ardent aspirations for her national unity and deliverance from foreign domination, which seemed to him attainable only through a return to the republican glories of ancient times. M.'s patriotic enthusiasm speedily gained absolute sway over his spirit, and led him to renounce his cherished idea of a life of literature and contemplative study, for the action and strife of the political arena. In 1827, his maiden essay in literature, 'Dell' Amor Patrio di Dante,' appeared in the liberal journal, the *Subalpino*; and he subsequently contributed critical, literary, and political papers to the *Antologia* of Florence and the *Indicatore Genovese*. In the pages of the latter originally appeared the essay republished under the title *Scritti d'un Italiano Vivente*. Literature, according to M.'s own assertion, having been employed by the liberal party solely as a means for the great end of liberal propagandism, the journals were suppressed, and the writers disbanded. In 1830, the affiliation of M. to the secret society of the Carbonari was the introductory step to his practical political career; and the young member was speedily invested with a preponderating influence in the counsels and missions of the body. Insnared and betrayed by a Piedmontese spy, M. was arrested, detained six months in the fortress of Savona, and finally liberated on condition of his departure from Italy. After short residences in several places, he took up his abode in Marseille, whence he addressed to Charles Albert his famous letter, which drew down on the daring young writer a decree of perpetual banishment. The organization of a new liberal league, 'Young Italy,' was M.'s next work. Republican and unionist to the core, the tendencies of this great body were more humanitarian and universal than those of its extinct predecessor, whose theories and methods were known as Carbonarism. In addition to the paramount aim of Italy's republican union under one common law, and the extinction of foreign rule, the general principles of this new association enforced the universal obligation to labor for a common moral regeneration, and the establishment of political equality over the world. Liberty, equality, and *humanity* were the watchwords of the body; 'God and the People' their motto; white, red, and green their tricolored banner; education and insurrection the great agencies of their operations; assassination was erased from their statutes, and the symbolic dagger of the Carbonari was replaced by the more humane emblems

of a book and the cypress. M. was the animating spirit of this formidable league, which speedily inclosed all Europe in a net-work of similar associations, modified to meet the individual requirements of the various European nationalities. Banishment from Marseille, in consequence of the extensive operations of the society having been revealed to the authorities, compelled M. to resort to concealment for several months. About this time, a charge was brought against him of advocating assassination as a legitimate weapon in the warfare of liberalism; but the charge was proved in the public tribunals of France to be false; and in the British parliament (1845), Sir James Graham made an apology to M. for having re-echoed the calumny. The first-fruits of La Giovine Italia was the revolutionary expedition of Savoy, organized by M. at Geneva, but defeated by the royal troops. Sentence of death, *par contumace*, was recorded against M. in the Sardinian courts for his participation in the affair; but he soon recommenced with increased vigor his revolutionary operations. A new association, 'New Europe,' based on principles of European rights and enfranchisement, was inaugurated by the exertions of M. in Switzerland. In 1837, M. quitted Switzerland for England, and finally took up his abode in London. Thence, his labors in the Italian revolutionary cause were incessant. To trace his part in the great crisis of 1848 would be to record the history of that period, so intimately were his individual acts connected with the course of events. The resolute combatant of partial union and monarchical leadership at Milan, M. retired to Switzerland on the capitulation of Milan to the Austrians, to reappear in Florence on the rising of Tuscany, and finally at Rome, where he was elected triumvir amid the triumphant rejoicings of the capital of Italy. His tenure of supreme authority was marked by such wisdom, moderation, and success, as to elicit a public tribute of approbation from Lord Palmerston. On the surrender of Rome by M.'s advice, he quitted the city, and proceeded to Lausanne *viâ* Marseille. The conduct of France he bitterly attacked in public letters to De Tocqueville and others. He subsequently returned to London, and at his instigation, risings in Milan (1853) and in Piedmont (1857) were attempted. In 1859, while lending the whole weight of his influence to the revolutionary movements going on in Italy, he combated with vigilant foresight the threatened French predominance, and refused to accord faith to the liberal program of Louis Napoleon. The Sicilian expedition of 1860 owed as much to the organization of M. as to the heroic command of Garibaldi (q.v.). In 1864, he was expelled from Switzerland, and returned to England. Next year he was elected by Messina deputy to the Italian parliament; but the election, to which he himself as a republican would have declined to accede, was cancelled by the parliament. M. is said to have founded 1865 the 'Universal Republican Alliance.' In 1868, he fell into a dangerous illness,

from the effects of which his health never recovered, though his zeal remained as ardent as ever. After an ineffective scheme for a republican rising, M. ventured to enter Italy, and was arrested at Gaeta, where he remained a prisoner till Rome was taken by the Italian army. He condemned the Parisian Commune of 1871, March. On his death at Pisa, the Italian government honored him with a public funeral.

M.'s writings are various and extensive, and include dissertations on art, literature, and music. A complete ed. (*Scritti, Edite e Inediti*) was published 1861 and following years. Whatever may be thought of M.'s political views, few will refuse to admire the ardent sincerity of his patriotism, or the inflexibility with which he pursued his aim, unchecked by persecution, calumny, and defeat. M. possessed in the highest degree that personal fascination by which friends are converted into ardent partisans. In his private life, he is allowed to have been a model of purity and frugal simplicity, as in his public career he was conspicuous for disinterestedness and self-abnegation; and to these personal virtues of M., aided by his extraordinary influence and eloquence, those who know Italy best ascribe a great share at least in inspiring that higher tone of life manifest in recent years among the Italian youth, without which the political regeneration of the country would have been impossible. He has been well called the prophet of Italian unity; and, as a prophet, he was naturally inspired rather with the lofty ideal than with the immediately practical. See *Memoir*, by E. H. V. (London 1874).

MAZZUO'LI, or MAZZO'LA: see PARMIGIANO.

ME, pron. *mē* [AS. *me*; Ger. *mich*; Icel. *mik*; Ir., Gael., and W. *mi*; L. *me*, *me*]: the objective case of the pron. I. METHINKS, it appears to me.

MEACOCK, n. *mē'kōk* [Gael. *mi-coc*, unintelligent, stupid—from *mi*, not; *coc*, intelligent: probably only a corruption of *meek-cock*]: in OE., a silly, effeminate man; a hen-pecked husband; a uxorious man: ADJ. effeminate; tame; cowardly.

MEAD, n. *mēd*: a poetic form for MEADOW, which see.

MEAD, n. *mēd* [W. *medd*; Ger. *meth*; Dut. *mede*, drink made of honey and water: Gr. *mēthē*, drunkenness; *methu*, strong drink]: fermented and flavored liquor made from honey: the honey is mixed with water, and fermentation is induced in the usual manner. Sometimes the honey which remains in the combs, after the usual processes of dropping and squeezing, is used for making M., which is a thin and very brisk, but luscious beverage. M. has been in use from very ancient times, and was known equally to the polished nations of s. Europe and the barbarous tribes of the north. Pliny says that it has all the bad qualities of wine, but not the good ones. The Latin name is *Hydromeli*,

MEAD—MEADE.

MEAD, *mēd*, CHARLES MARSH, D.D.: clergyman: b. Cornwall, Vt., 1836, Jan. 28. He graduated at Andover Theol. Seminary 1862; spent 1863–66 studying in Berlin and Halle; was prof. of Hebrew in Andover Theol. Seminary 1866–82; and since 1882 has resided in Germany. He received the degree PH.D. from Tübingen 1866, and D.D. from Middlebury 1881; was a member of the Old Test. revision committee; and has published *Exodus*, in the American Lange series of commentaries (1876), and *The Soul Here and Hereafter: a Biblical Study* (1879).

MEAD, *mēd*, LARKIN GOLDSMITH: b. 1835, Jan. 3, Chesterfield, N. H.: sculptor. He was educated at Brattleboro, Vt.; revealed his talent first by making in snow a colossal figure of an angel; and was aided by Nicholas Longworth, Cincinnati, O., to study, 1853–55, with Henry Kirke Brown Brooklyn. His earlier works were *Recording Angel* (1855); *Vermont*, colossal figure, to crown the dome of the state-house, Montpelier, Vt., and *Ethan Allen*, statue in the portico of the state-house. In 1862 he fixed his residence in Florence, Italy, and has there executed works showing original genius. Among these are: *The Returned Soldier*, group (1866); *Columbus's Last Appeal to Queen Isabella*; *America*, for a soldiers' monument, St. Johnsbury, Vt.; *Venice, the Bride of the Sea*; *The Discovery of America*; statue of Ethan Allen, for the capitol statuary hall at Washington (1874); statue of Lincoln, for the monument at Springfield, Ill., set up 1874, Oct. 15; four colossal groups, designated *Cavalry*, *Infantry*, *Artillery*, and *Navy*; and colossal statue of the Mississippi as a river-god.

MEADE, *mēd*, GEORGE GORDON: general in the U. S. army: 1815, Dec. 30—1872, Nov. 6; b. Cadiz, Spain, where his father, Richard W. M., was U. S. navy agent. He was at school in Philadelphia, and at Washington in the school of Salmon P. Chase, and at Mt. Hope near Baltimore; graduated from West Point 1835, and served as 2d lieut. of artillery in the Seminole war, Fla., and at the Watertown arsenal, Mass., until 1836, Oct. 26, when he resigned, and entered on the profession of civil engineer. He was engaged on the construction of the r.r. at Pensacola, Fla., till 1837, April; then, by appointment of the war dept., on the survey of the mouth of Sabine river, and later of the mouths of the Miss. river till 1839, Feb.; in 1840 on the survey of the boundary line between the United States and Texas; and Aug. of same year on the survey of the n.e. boundary between the United States and Brit. N. America. He was married, 1840, Dec. 31, to Margaretta, dau. of John Sergeant. 1842, May 19, he became 2d lieut. topographical engineers, continuing the n.e. boundary survey till 1843, Nov. In 1844, 5 he was engaged on surveys in Del. Bay; 1845, Sep., he went on Gen. Zachary Taylor's staff at Corpus Christi, Texas, and took part, 1846, May, in the battles of Palo Alto and Resaca de la Palma, and in occupying Mata-

moras. Later, under Gen. Wm. J. Worth, he led the assault on Monterey, gaining there his brevet as 1st lieut. He made the march to Tampico, and was on the staff of Gen. Robt. Patterson at the siege of Vera Cruz. He then returned home, and was engaged 1847-49 in mapping surveys of Fla. reefs and building light-houses in Delaware Bay. 1849-50 he served against the Seminole Indians in Fla., and 1850-51 was again on light-house work in Delaware Bay. He received promotion, 1st. lieut. of topographical engineers, 1851, Aug. 4, and 1851-56 was employed in light-house construction at Carysfort Reef, Sand Key, Cedar Key, and Coffin's Patches, in the Florida reefs. He was made capt. topographical engineers 1856, May 19, and was on the geodetic survey of the n.w. lakes 1856; and 1857-61 had charge of all the northern lake surveys.

It was as a capt. in the U. S. regular army that M. entered service in the civil war, and henceforth, to the close of the war, he had one rank as an officer of the regular army, and another as commander of volunteers. He began 1861, Aug. 31, as brig-gen. of volunteers, in command of the 2d brigade Penn. reserves of the Army of the Potomac. His promotions in the regular army were: maj. of topographical engineers 1862, June 18; brig.gen. 1863, July 3, date of the Gettysburg victory; and maj.gen. 1864, Aug. 18. As commander of volunteers he was promoted maj.gen., with commission dating 1862, Nov. 29. He served through the war in the Army of the Potomac, in all its campaigns, and in all its battles except two. During two of the less than four years of its existence, and the two years which were the period of its greatest services and successes, he was its commander, and never led it except to victory. He changed its record of reverses at Gettysburg, in a battle which served to create the opinion at home and abroad that the issue of the war would be the victory and re-establishment of the Union.

M.'s earlier services were in the battles of Mechanicsville, Gaines's Mill, and Glendale or New Market Cross-Roads. A severe wound at Glendale sent him home to Philadelphia; but he very shortly returned and was in the second battle of Bull Run. He took Gen. John F. Reynolds's command, the Penn. reserves, in the actions in Md., and won distinction at South Mountain and Antietam, especially by the boldness and skill with which he flanked the Confederates from the right at Antietam. Gen. McClellan advanced him here on the field to the command of the first corps, when Hooker was disabled by a wound. At Fredericksburg, 1862, M., at the head of his division, broke through Stonewall Jackson's troops, driving everything before him, until he was in the presence of Lee's reserves; but for want of proper support he was compelled to fall back with heavy loss. He had two horses shot under him in this severe engagement, and got his commission as maj.gen. of vols. from the date of a bat-

MEADE.

le which would have anticipated Gettysburg if the work of others had been equal to his. He was then put in command of the 5th corps, and at Chancellorsville, 1863, May, was again successful on the left in the first day's fight, until he was recalled by Hooker. Two months later, on the night of June 27, he was ordered to relieve Hooker, and the next day he took command of the Army of the Potomac, then encamped about Frederick, Md., while Lee's army of 100,000 men had gone up the Cumberland valley, for the invasion of Penn.—the boldest Confederate movement of the war. M. at once got his scattered army in motion, June 29, to bring on a general engagement, meanwhile barring Lee from Baltimore and doing him all the injury possible on the march. There elapsed but a day or two before a battle was precipitated, 1863, July 1, and continued July 2 and 3, with so great success to the Union arms, and so severe defeat and loss to the Confederates, that the Fourth of July saw Lee in full retreat for the Potomac, and the news went round the world that the Union was too strong to be broken. It had been M.'s design to take position on Big Pipe Creek, about 15 m. s.e. from Gettysburg, and await Lee's attack. But Hill's vigorous movement to Seminary Ridge July 1, driving the Union forces, after his check by Buford, to the hills beyond Gettysburg, with 5,000 Union soldiers killed or wounded, and as many more missing—Reynolds also being among the dead—was a beginning none the less serious that Hill had even more killed or wounded, though fewer missing. M. at Pipe Creek, heard the firing and sent Hancock to take command. Hancock at once thought the Gettysburg position a good one; M. also saw this and promptly changed his plans. By daylight, July 2, the armies were in array on a vast elliptical field of which Gettysburg was the centre. M. took command at noon, and the battle of that day lasted from 4 p.m. to night, with no decisive advantage to either side, except the Union success in the fight for Round Top, a position of great importance. July 3, the supreme effort of Lee, in Pickett's charge with 18,000 men, was successfully met by M., hurling his forces from all sides, as well as concentrating the batteries of his whole line, so that not one in four of the makers of one of the greatest charges in the history of war, returned alive. There were 16,000 killed, wounded, and prisoners of Lee's army that day, to 3,000 of M.'s.

M. commanded the army of the Potomac the next year under Grant, who was lieut.gen.; and led his troops with consummate ability through the battles of the Wilderness and the whole of the campaign, ending with the close of the war. From 1865, July 1, to his death, M. held department commands, for most of the time that of the milit. div. of the Atlantic. Gen. M. died in Philadelphia.

MEADE, RICHARD KIDDER: revolutionary soldier: 1746, July 14—1805, Feb.; b. Nansemond co., Va. He was

MEADE—MEADOW.

sent to Harrow, Eng., for education; soon after his return entered the revolutionary army, 1775; assisted that year, June 24, to remove arms from Lord Dunmore's house to the Williamsburg magazine; was in command of a company at the battle of Great Bridge, near Norfolk, Va., 1775, Dec.—the first shock of arms in Va.; from that time became one of Washington's aides, and served through the war in that capacity, with rank of col.; was in all the great battles fought by Washington; had charge of the execution of Maj. André. He became a farmer at the close of the war, at 'Lucky Hill,' in the Shenandoah valley. He married, 1765, Elizabeth Randolph, aunt to John Randolph, of Roanoke; and 1780, for his second wife, the widow of William Randolph, of Chatsworth.

MEADE, RICHARD WORSAM: 1778, June 23—1828, June 25; b. Chester co., Penn.; son of George M., one of the patriots of the Revolution. He was a merchant in Philadelphia; merchant and shipowner at Cadiz, Spain, from 1803, and U. S. navy agent 1805–16. During the peninsular war he rendered great services to Spain, but was unable to collect his dues; and as the result of some suits at law, he was imprisoned. The treaty between Spain and the United States (1819) bound the latter to pay the just claims of Americans on Spain, and M. at once returned home, with a certificate of Spanish debt for \$491,153.62. The commission to settle such claims refused payment on the certificate without the original vouchers; and protracted efforts to secure later recognition of the claim were unsuccessful. M. introduced merino sheep and sherry wine into this country. He was father of Gen. George G. Meade (q.v.).

MEADE, WILLIAM, D.D.: 1789, Nov. 11—1862, Mar. 14; b. near Millwood, Frederick co., Va.: Prot. Episc. bishop. A graduate of Princeton, N. J., 1808, M. studied theol., and was ordained deacon 1811, priest 1814; was rector of Christ Church, Alexandria, Va., 1811–2, assistant at Millwood, Va., 1812–21, and rector 1821–29; was active 1813–4, in securing the choice of Dr. Richard C. Moore as bp. of Va., after Bp. James Madison, and in founding at Alexandria a diocesan theol. sem., in promoting educational and missionary work, in aiding colonization, and in securing emancipation of slaves. He was chosen assist. bp. of Va. 1829, Aug. 19; bp. 1841, Nov. 11; was pastor of Christ Church, Norfolk, Va., 1834–36, and was most active and successful in reviving and upbuilding the interests of the Episc. Church. He earnestly opposed secession in 1861, and submitted only to necessity. Of his numerous publications, *Old Churches, Ministers, and Families of Virginia* is of most lasting value.

MEADOW, n. *mě'tō* [Dut. *meyland*, meadow-land—from *maeden*, to mow: Bret. *medi*, to cut, to mow: Bav. *mad*, hay-harvest]: land affording hay; flat grass-land. MEADOWS, indefinite term for level lands, usually moist, but not necessarily marshy, covered with grass, which

MEADOW GRASS.

is usually rich in consequence of the moisture, often also from advantages of soil. The grass is either used for pasture, or is mown and carried away. *Water Meadows* are meadows in which the supply of water is increased and regulated by artificial irrigation: see IRRIGATION. The herbage of all meadows consists generally of various kinds of grasses; meadow grass, rye grass, timothy, fox-tail, red-top, and bent grass or florin predominating. MEADOWY, a. *měd'ō-ž*, containing or resembling meadow. MEADOW-BARLEY and MEADOW-CATSTAIL, good fodder-plants. MEADOW-HAY, hay from the mixed grasses which grow naturally in meadows. MEADOW-ORE, bog iron ore. MEADOW-SAFFRON (incorrectly the autumn crocus), plant with pale purple flower; the *Colchicum autumnale*, ord. *Melanthaceæ* (see COLCHICUM). MEADOW-SWEET, or QUEEN OF THE MEADOWS, favorite wild plant having crowded cymes of cream-yellow, rosaceous, and odoriferous flowers; the *Spiræa ulmāřa*, ord. *Rosacæ*: see SPIRÆA.

MEAD'OW GRASS: genus of grasses common in the temperate regions of the globe and highly valued for pasturage. Several of the varieties make excellent hay, and are largely cultivated for this purpose. In Great Britain both the rough-stalked and the smooth-stalked species are largely grown in pastures. The M. G. of Abyssinia is an annual sort which in its native country yields great quantities of herbage, besides seeds which are used for making bread. Beer is made by putting slices of this bread in warm water and keeping in a closed vessel and at a high temperature for several days. Among the varieties common in England and America is the *Poa annua*, which flowers early in spring, and is often a troublesome weed in cultivated fields. In the United States several varieties have received the general name M. G. The following are the most common: Meadow Fox-tail, (*Alopecurus pratensis*), perennial plant valuable for pasture, but not desirable for hay; it flowers in May, and resembles Timothy in appearance, but has a soft spike and thrives in wet soils. Meadow Fescue (*Festuca pratensis*), useful in pastures and mowings; it thrives in a variety of soils, and flowers in June and July. Tall Meadow Oat Grass (*Arrhenatherum avenaceum*), known in France as Ray Grass; excellent for permanent pastures and for soiling; also desirable, when grown with other grasses, in mowings, especially in the south. Meadow Soft Grass (*Holcus lanatus*), known often as Velvet Grass; flowers early, seldom grows above two ft. in height; thrives in nearly all soils, and is handsome, but of little value. Rough-stalked M. G. (*Poa trivialis*), useful for pasturage and hay, adapted especially to moist soils. Fowl M. G. (*Poa serotina*), often called False Red-top; one of the most valuable varieties for moist land; it flowers late, makes good hay for cattle and sheep, and is excellent for moist pastures.—For cultivation of the various kinds of M. G., see HAY.

MEADOW LARK—MEAGHER.

MEADOW LARK, or AMERICAN STARLING: see STARLING.

MEADOW MOUSE: see VOLE.

MEADVILLE, *mēd'vil*: city, cap. of Crawford co., Penn.; on the Atlantic and Great Western r.r., at junction of the Franklin branch; 34 m. s. of Erie, and 82 m. n. by w. of Pittsburg. It is the seat of Alleghany Coll., founded 1817 as Presb.; since 1833 under control of the Meth. Episc. Chh., with preparatory and collegiate instruction for both sexes, and a considerable library. M. is the seat also of M. theol. seminary, under Unitarian control, established 1844 and built up largely through the beneficence of the Huidekoper family, by whom the Unitarian church here was organized. M. is a well-built city, in a region of rich farms, having a large trade, especially with the oil regions, and extensive manufactures of machinery, woolens, paper, and edge-tools; also national banks, savings banks, court-house, state arsenal, opera-house, graded public schools, and high school, public library, daily and weekly newspapers, and a large number of churches. The settlement of M. dates from 1789, founded by Gen. David Mead as fortified post. Pop. (1890) 9,520; (1900) 10,291.

MEAGHER, *mâ'hēr*, THOMAS FRANCIS: Irish orator and patriot: 1823, Aug. 3—1867, July 1; b. Waterford, Ireland. He was educated at the Jesuit Coll. of Clongowes, Kildare, and at Stonyhurst Coll., England; a graduate of Dublin Univ. in law, became leader of the 'Young Ireland' movement for Irish independence; 1846 helped to organize the Irish confederation; headed a delegation to Paris 1848, to congratulate the French republicans on the overthrow of Louis Philippe; was arrested, soon after his return, on charge of sedition, and later, while under bail, was arrested again on charge of high treason; was tried, convicted, and sentenced to death, but the sentence was commuted to transportation for life to Tasmania, whence he escaped, and came to New York 1852, May. After two years spent in lecturing on Irish independence in the chief cities of Amer., M. began the practice of law in New York, 1855, was editor of the *Irish News*, 1856, and in 1861 joined the 69th N. Y. reg., of which he served as acting major in the first battle of Bull Run. After three months' service, he organized, in New York, the Irish brigade, being col. of its 1st reg., and was advanced to command the brigade, with rank of brig.gen. of volunteers from 1862, Feb. 2. He was engaged in the battles before Richmond, at Antietam, at Fredericksburg, where he was wounded, and at Chancellorsville, after which he resigned, 1863, May. He was again commissioned early in 1864, and served in command of the Etowah district (parts of Tenn. and Ga.) until 1865, Jan. He then became sec. of the territory of Montana, and in the absence of the gov., from 1866, Sep., was acting gov. He was drowned while on an expedition on the Missouri river, to suppress Indian hostilities. M. pub. *Speeches on the Legislative Independence of Ireland* (New York 1853), and *Last Days of the 69th N. Y. Reg. in Va.* (1861).

MEAGRE—MEAL.

MEAGRE, a. *mē'gēr* [F. *mangre*; Ger. *mager*, thin, lean—from L. *mācer* or *mācrum*, lean]: lean; hungry; poor; scanty; without strength, fulness, or richness; barren. **MEAGRELY**, ad. *mē'gēr-ly*. **MEA'GRENESS**, n. *-gēr-nēs*, leanness; poorness; scantiness.—**SYN.** of 'meagre': thin; starved; gaunt; lank; emaciated.

MEAL, n. *mēl* [Dut. *mael*, flour—from *maelen*, to grind: Goth. *malun*; Ger. *mahlen*; W. *malu*; Gael. *meil*; L. *molĕrĕ*, to grind: W. *mal*, what is ground or bruised]: ground grain not sifted from the bran or coarser portion (see **BREAD**): V. in *OE.*, to sprinkle, as with meal; to mingle. **MEAL'ING**, imp. **MEAL'ED**, pp. *mēld*. **MEALY**, a. *mēl'y*, having the qualities of meal; dry and friable; like meal; besprinkled as with meal. **MEAL'INESS**, n. *-nēs*, dryness and friableness. **MEAL'Y-MOUTHED** [perhaps connected with Gael. *mīlis*, sweet—from *mil*, honey]: affectedly delicate in speech; speaking of things in softer terms than the truth warrants, from interested motives; disingenuous; hypocritical.

MEAL, n. *mēl* [Scot. *mail*, an amount of money to be paid at a fixed time: Ger. *mahl*, a meal; *mal*, a time: Icel. *mal*, the time of doing anything, especially for taking food: AS. *mael*, what is marked out, separate part]: the food taken at one time; a repast; a part. **PIECEMEAL**, by separate pieces; by fragments.—*Meals*, or repasts, have varied in daily number at different times and in different countries. Among the Greeks and Romans of the classic ages, it was the general practice to have the principal M. toward evening, a light M. in the morning, and another in the middle of the day. The *akratismn*, *ariston*, and *deipnon* of the Greeks corresponded nearly to the breakfast, luncheon, and dinner of the present time; the first was taken immediately after rising in the morning, the second about mid-day, and the *deipnon*, the principal M., often not till after sunset. In Rome of the Augustan age, the three corresponding meals were *jentaculum*, *prandium*, and *cæna*. The two former were simple and hasty, except among persons of luxurious habits, with whom the mid-day meal was sometimes elaborate. The *cæna*, in the evening, consisted of three courses, with often great variety of viands. Reclining was the usual posture at meals for men; the women and children were seated. Two persons, occasionally three, reclined on one couch. Before a guest took his place at table, his shoes were taken off, and his feet washed by an attendant.

In mediæval and modern Europe, the prevailing practice till nearly the middle of the 18th c. was to have three meals in the day, the mid-day, and not the evening M., being the principal one. The habits of all classes were early; four was a usual hour for rising, and five for breakfast. Twelve was the dinner-hour, when it was the usage in England, till Queen Elizabeth's time, for every table, from that of the twenty-shilling freeholder, to the table in the baron's hall and abbey refectory, to be open

MEALIES--MEAL-WORM.

to all comers, with free fare, bread, beef, and beer. Supper followed in the evening, a less abundant repetition of dinner. In the last 120 years, a revolution has been going on in the hour of dinner, which has gradually become later, till it has reached the present usage of from six to eight in the evening among the more cultivated classes. Breakfast is correspondingly later—from nine to ten. The M. called tea is but a part of dinner, and supper, as a regular M., has nearly disappeared. A light M. called luncheon (improperly *lunch*) is often taken between breakfast and dinner. Dinner has therefore come nearly to correspond with the supper of former times. The usage in the United States is increasingly, though not entirely, the same as in England; but households whose principal members are engaged in manual labor mostly retain the earlier hours of our ancestors. The change to later hours in the United States has been much more recent than in England, and is less uniform. This change of hours has brought one important change to the better in social habits: the excessive drinking, so common in Britain during the Georgian era, even among people of refinement, has disappeared; the long carousals of that period have been abridged to an hour, or half an hour, spent over wine after dinner. In Britain, dinner is, more than anywhere else, made a social meal, and an occasion of meeting one's friends; and public dinners, with toasts and after-dinner speeches, have been a characteristically British mode of celebrating any public event or anniversary—now completely naturalized in the United States. In France and Italy, the gradual advance of the dinner-hour has not proceeded further than four or five o'clock. In Germany, the usage still obtains, to a large extent, of an early dinner and a supper. One o'clock is a usual dinner-hour, and even the court hour has hardly advanced beyond three and four. In Vienna and some parts of Germany, it is not uncommon to have five meals a day—breakfast, luncheon, dinner, tea, and supper.

MEALIES, n. plu. *mē'lēz*: a s. African name for Indian corn or maize.

MEAL-TUB PLOT: in English history, a conspiracy, 1679, against James, Duke of York. The paper on which the scheme was written was hidden in a meal-tub; hence the name. The leader, Dangerfield, finally confessed to forgery of the papers, and was severely punished.

MEAL-WORM: larva of *Tenebrio molitor*, coleopterous insect of a genus allied to *Blaps* (q.v.), but possessing wings and wing-covers. The perfect insect is of pitchy or dark chestnut color, smooth, about half an inch long, with short 11-jointed antennæ, and stout legs. The insect is most active in the evening. In some countries it infests granaries, mills, and houses in which stores of meal or flour are kept, as its eggs are deposited among these substances, on which the larva feeds, often doing much injury. Stores of ship-biscuit often suffer from this cause. The larva is about an inch long, thin and

MEALY BUG—MEAN.

round, of ochreous color, with bright rusty bands, very smooth and glossy, with six small feet and two very short antennæ.—Another species, *T. obscurus*, occasionally is found in American flour, and has thereby been introduced into Britain. This insect is of dull black color above; the under parts, legs, and antennæ, chestnut. The larva is shining and pale brown.—Cleanliness and care are the best preventives. Meal-worms are a favorite and excellent food of caged nightingales.



Tenebrio Molitor:

1 and 2, perfect insect; 3, pupa; 4, larva (meal-worm).

MEALY BUG (*Coccus adonidum*): insect infesting some hothouses, and very injurious to pine-apples and other plants. It is reddish, and covered with a white powdery substance, whence its name. See *Coccus*.

MEAN, a. *mēn* [OHG. *main*, a spot, a stain, impure: Lap. *maine*, a bodily failing, sickness: Icel. *mein*, sore, injury: AS. *gemæne*; Ger. *gemein*, common: comp. Gael. *mion*, small, mean]: low-minded; base; wanting in dignity or honor; low in rank or birth; poor; pitiful; stingy. **MEANLY**, ad. *mēn'ly*, moderately; without dignity; without respect. **MEAN'NESS**, n. *-nēs*, low state; poorness; want of dignity or excellence; want of liberality. **MEAN-SPIRITED**, having a low, grovelling, and abject disposition.—**SYN.** of 'mean': vile; low; ignoble; abject; humble; beggarly; degraded; wretched; paltry; sordid; degenerate; servile; vulgar; spiritless; menial; penurious; niggardly; grovelling; dishonorable; slavish; disgraceful; despicable; shameful; contemptible; ungenerous.

MEAN, a. *mēn* [OF. *meien*; F. *moyen*, mean, intermediate—from L. *mediānus*, extended, middle—from *mediūs*, middle: comp. Gael. *meadhon*, the middle]: at an equal distance from the extremes; moderate; without excess; intermediate: N. the middle point or place; in *math.*, the average of resultant value; the middle rate or degree: specifically, a term interpolated between two terms of a series, and consequently intermediate in magnitude. The *Geometric Mean* (q.v.) of two numbers is always less than their *Arithmetical Mean* (q.v.), and greater than their

MEAN—MEARNS.

Harmonic Mean; and the geometric mean is itself a geometric mean between the other two. MEAN, in *OE.*, the tenor part of a musical composition. MEANS, n. sing. or plu. *mēnz*, the intermediate operations between the agent and the object to be accomplished; that which is used to effect an end; instrument of acting or effecting; resources; income, or that by which we live; the middle terms of a proportion where the *first* is to the *second* as the *third* is to the *fourth*. BY ALL MEANS, certainly; without fail. BY NO MEANS, not in any way. BY ANY MEANS, in any way. THE MEANTIME, the time between the present and that when the thing spoken of is to be done. MEANTIME, ad. *mēn'tīm*, or MEANWHILE, ad. *mēn'hwīl*, in the intervening time; for the present time. MEAN TIME, time as measured by a perfect clock, or as reckoned on the supposition that all the days of the year are of a uniform length.

MEAN, v. *mēn* [Goth. *munan*, to think, to intend; Gael. *minich*, to explain; Icel. *muna*, to remember; Ger. *me'nen*; Dut. *meenen*, to think; comp. L. *meminis'sē*, to remember]: to intend, purpose, or design; to signify. MEAN'ING, imp.: ADJ. significant: N. purpose; intention; aim, whether in the mind only or expressed; the sense, as of words or expressions; signification; import. MEANT, pt. and pp. *mēnt*, did mean. MEAN'INGLESS, a. -lēz, devoid of meaning. MEAN'INGLY, ad. -lē, significantly. —SYN. of 'mean, v.': to intend; purpose; design; signify; indicate; import; denote.

MEANDER, n. *mē-ān'dēr* [L. *Mæander*; Gr. *Maiandros*, the name of a winding river in Phrygia]: a winding course; a winding or turning in a passage or current: V. to wind or flow round; to flow in a winding course or passage. MEAN'DERING, imp. -dēr-īng: ADJ. winding in its course or current: N. a winding course. MEAN'DERED, pp. -dērd. MEAN'DRIAN, a. -drī-ān, having many turns. MEANDRINA, n. *mē-ān-drī'nā*, large hemispherical corals having their surfaces covered with serpentine ridges and depressions, resembling the convolutions of the human brain.

MEANING, MEANT: see under MEAN 3. MEANS, MEANTIME, MEANWHILE: see under MEAN 2.

MEARIM, *mā-ā-rēng'* (or MIARIM, *mē-ā-rēng'*) RIVER: same as the Maranhao river; rising in the Brazilian province of Maranhao (q.v.), and flowing n. into the bay of São Marcos, abt. 350 m. Its current is remarkably strong; and its resistance to the ocean tide is prolonged, yielding at last to a swift upward rush of the waters with a great roar. It is navigable. The chief of its many affluents is the Pindare.

MEARNS, THE: see KINCARDINESHIRE.

MEASLES.

MEASLES, n. plu. *mē'zls* [Dut. *mæse'en*, measles—from *mæse*, a spot, a stain: OHG. *másá*, a spot, the mark of a wound]: disease manifested by a crimson rash on the skin, affecting chiefly children; a disease of swine and trees. MEASLED, a. *mē'zld*, infected or spotted with measles. MEASLY, a. *mē'zli*, infected with measles or eruptions, as swine; applied to pork containing the parasite *Cysticer'cus cellulo'sūs*. Note.—OF. *mesel*, a leper—from L. *misellus*, wretched, unfortunate—from L. *miser*, wretched, is not an etymon of *measles*, but of OE. *mesel*, which uniformly signifies 'leper.' See Skeat.

MEA'SLES (known also as RUBEOLA and MORBILLI): one of the group of blood-diseases termed *Exanthemata* (q.v.), though, from the eruption which appears on the surface of the body, it is classed sometimes with skin-diseases. It is communicable from person to person, and seldom occurs more than once in the same individual. Its period of incubation—i.e., the time between exposure to the contagion and the first appearance of the febrile symptoms which precede the eruption—is usually about a fortnight; then come lassitude and shivering, soon followed by heat of skin, increased rapidity of the pulse, loss of appetite, and thirst. The respiratory mucous membrane is affected, and the symptoms are much the same as those of a severe cold in the head, accompanied with dry cough, slight sore throat, and sometimes tightness of the chest.

The eruption characteristic of the disease appears usually on the fourth day from the commencement of the febrile symptoms and the catarrh—seldom earlier, but sometimes some days later. It is a rash, consisting at first of minute red papulæ, which, as they multiply, coalesce into crescentic patches. It is two or three days in coming out, beginning on the face and neck, and gradually travelling downward. The rash fades in the same order as it occurs; and as it begins to decline three days after its appearance, its whole duration is about a week. The red color gives way to a somewhat yellowish tint, and the cuticle crumbles away in a fine bran-like powder; the process being attended often with considerable itching.

There are two important points in which it differs from Small-pox (q.v.), with which in its early stage it may be confounded: these are—(1), that the fever does not cease or even abate when the eruption appears, but sometimes increases in intensity; and (2), that the disease is not more severe or more dangerous because the eruption is plentiful or early. The character of the eruption, after the first day, will serve to remove all doubt in discriminating these two diseases; and the comparative prevalence of either disease in the neighborhood will materially assist in forming the diagnosis. It is distinguished from Scarlet Fever (q.v.) or scarlatina—(1), by the presence at the outset of catarrhal symptoms, which do not occur in the latter disease, at least not prior to the eruption; (2), by the absence of the throat-affection,

MEASURE.

which always accompanies well-marked scarlet fever; (3), by the character of the rash, which in M. is said to present somewhat the tint of the raspberry, and in scarlet fever that of a boiled lobster; which in M. appears in crescentic patches, and in scarlet fever is universally diffused; which in M. appears usually on the fourth day, and in scarlet fever on the second day of the disease.

In ordinary uncomplicated M., the prognosis is almost always favorable; there is a malignant form, but it is very rare. The chief danger is from inflammation of some of the textures that compose the lungs; and in scrofulous children it often leaves chronic pulmonary mischief. Thus, the disease, though mild, is liable to serious sequels, and should be carefully watched. No age is exempt from the disease, but it is much more frequent in childhood. One reason probably is that many persons have it in early life, and are thus protected from it at a later period.

In the usual mild forms of the disease, nothing more is requisite than to keep the patient on low diet, attend to the state of the bowels, and prevent exposure to cold, which is best accomplished by keeping him in bed with the ordinary warmth to which he is accustomed in health. If the chest-symptoms become urgent, they must be treated according to their nature. Bronchitis (q.v.), sometimes extending into Pneumonia (q.v.), is most to be feared. If the eruption disappear prematurely, it may sometimes be brought back by placing the patient in a warm bath. In such cases, stimulants are often required, but must, of course, be given only by advice of the physician. The patient must be carefully protected from exposure to cold for a week or two after the disease has disappeared, as the lungs and mucous coat of the bowels are for some time very susceptible to inflammatory attacks.

MEASURE, n. *mězh'ûr* [F. *measure*; Sp. *medida*, measure—from L. *mensūra*, a measure: comp. Gael. *meidh*, to measure: see METE]: whole extent or dimensions of a thing; the unit or standard by which the extent or volume of anything is ascertained; in *arith.*, a divisor that leaves no remainder; settled or stated quantity; limit; degree, as in some measure; allotment; moderation; meter in poetry; movement regulated by the time of music; stately dance; the division of the time by which the air and motion of music are regulated (see MEASURE, in Music): any act by which a final object or end may be attained, as a legislative *measure*: V. to compute or ascertain the extent, size, or capacity of anything by means of a certain unit or standard; to judge of quantity, extent, or greatness; to proportion; to be of a certain extent. MEAS'URING, imp.: ADJ. used in taking the measure or extent. MEASURED, pp. *mězh'û-rd*: ADJ. uniform; steady; limited or restricted. MEAS'URES, n. plu. means to an end; proceedings; in *geol.*, beds or strata, as those containing coal; standards or definite units of capacity or extent: see WEIGHTS AND MEASURES:

MEASURE—MEAT EXTRACT.

METRIC SYSTEM. MEAS'URER, n. -û-rér, one who measures. MEAS'URABLE, a. -û-ră-bl, that may be measured. MEAS'URABLY, ad. -bĥ. MEAS'URABLENESS, n. -bl-nēs, the quality of being measurable. MEAS'URELESS, a. -lēs, that cannot be measured; immense. MEAS'UREMENT, n. -mēnt, the act of measuring; the result of measuring. TO HAVE HARD MEASURE, to be harshly or oppressively dealt with. TO TAKE MEASURES, to begin proceedings to accomplish an object in view. IN MEASURE, in moderation. WITHOUT MEASURE, unlimited in quantity or amount.—SYN. of 'measure, n.': rule; proportion; quantity; portion; boundary; meter; tune; mean;—of 'measureless': unlimited; endless; unbounded; boundless; immeasurable; infinite; limitless; vast.

MEAS'URE, in Music: term applied to the quantity of notes which are placed in the bar: it is generally called the *time*, of which there are but two kinds: common time, containing an equal quantity of notes in the bar, and triple time, containing an unequal quantity. Common time is generally marked with a C at the beginning, which means that every bar contains four crotchets, or their value in other notes. There are other kinds of common time, marked $\frac{3}{4}$, $\frac{6}{4}$, $\frac{6}{8}$; and sometimes $\frac{12}{4}$, $\frac{12}{8}$. Triple time is marked $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{8}$, $\frac{9}{8}$, $\frac{9}{4}$. The lower figure indicates the parts of the semibreve, and the upper figure shows how many of these parts there are in the bar.

MEAT, n. mēt [Goth. *mats*, food; *matjan*, to take food: Icel. *mata*, food: F. *mets*, a mess, a dish of food]: food in general; anything eaten for nourishment; flesh of animals, to which the word is now generally restricted. MEAT-OFFERING, an offering consisting of meat or food. MEAT-SALESMAN, an agent in a town who receives and sells the carcasses of cattle, sheep, and the like, sent to him by country dealers. SWEETMEATS: see under SWEET.

MEAT EXTRACT: preparation of the essential life-supporting constituents of meat, separated by a process of infusion, straining, and evaporation, which removes the fat, and the bulk of the albumen, gelatine, and water. For a different preparation, see BEEF-TEA. The method of making M. E. is as follows: From a certain quantity of fresh beef every particle of fat, bone, and tendon is carefully removed. It is then chopped up and placed in a vessel, with a small quantity of water, in a water-bath, great care being taken to remove the albuminous coagulation which forms, as well as any fatty matter which may show itself. After a time a pale-brown, thickish fluid, of the consistency of treacle, will be found in the vessel. This is pure meat extract. It is poured off, leaving behind all the fibrous remains. That the good of the meat is largely in the extract, is shown by the fact that no animal will readily eat the residue, and a dog forced by hunger to do so will starve without other food. One lb. of extract contains the essence of 32 lbs. of beef. It will keep for years, only covered with a piece of writing-paper, as is done with jellies. So agreeable to the taste

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is pure M. E., that persons who have taken it in their invalid state often continue its use after recovery. For the invalid it has a wonderfully restorative effect, having extraordinary power to promote the assimilation of food. Even in cases of gastric fever, when, from the nature of the disease, the stomach is peculiarly unfitted to support food, the pure M. E. is found grateful, exhilarating, and strength-giving. In hospital use it is found that the convalescence of patients suffering from typhus is accelerated by the use of M. E., so much so as to be more economical than fresh meat, though its first cost in material is much greater. On the battle-field and in severe surgical operations, it has excellent sustaining effect. The contrast between the constituents of flesh and those of the M. E. prepared from it, is as follows: In 100 parts of beef are contained 50 parts of water, 30 of fat, 7 of gelatine, 4 of fibrine, and 4 of albumen. In 100 parts of M. E. are contained 51 parts of chemical compounds known as creatine, creatinine, inosic acid, osmazome, etc., 21 of mineral matters, 17 of water, 8 of gelatine, and 3 of albumen.

MEATH, *mēth*: maritime county of the province of Leinster, Ireland; bounded e. by the Irish Sea and the county of Dublin; 906 sq. m., or 580,083 acres, of which 547,391 are arable, about 30,000 waste, bog, etc. Pop. (1851) 140,748; (1861) 110,575; (1871) 95,558; (1881) 87,469; (1891) 76,987; of whom 76,616 were Rom. Cath., (1901) 67,497. The number of children attending the national schools 1880 was 17,856. The soil is a rich loam, and extremely fertile; but it has long been used almost entirely for pasture, the total extent under crops 1880 being only 138,169 acres. In the same year, the cattle amounted to 161,791, sheep to 174,573, pigs to 9,691. The surface is mostly an undulating level, forming the e. extremity of the great limestone plain of Ireland and rising slightly toward the n. and n.w. No minerals of importance are found. The chief rivers are the Boyne and Blackwater. The principal towns are Trim, Navan, and Kells, in the first of which the assizes are held. M. possesses abundant means of communication, being intersected by numerous roads and several railways, also by the Royal canal. The coast-line, about 10 m., has no port of importance, even as a fishing-station. The occupation of the people is almost wholly agricultural. Anciently, M., which included West Meath, and probably portions of several other adjacent counties, formed one of the kingdoms into which Ireland was divided, the royal seat being the celebrated Temor or 'Tara of the Kings,' the scene of the first preaching of Christianity under St. Patrick. After the English invasion, M. was early occupied by Strongbow, and was erected into a county palatine by Henry II., who conferred it on Hugh de Lacy. From this time forward it was the scene of many conflicts. In the end of the reign of Henry VIII., it was separated into E. and W. Meath. Few Irish counties present so many interesting relics of Irish antiquities of all the various periods.

MEATUS—MECCA.

Celtic remains abound along the Boyne and Blackwater. The earthworks of the ancient royal seat at Tara are still discernible, and some valuable and highly characteristic gold ornaments were there discovered. John's castle at Trim is one of the most extensive monuments of English rule in Ireland. The round tower and sculptured crosses of Kells are singularly interesting; and almost every parish in the county contains some relic of the feudal or ecclesiastical structures which formerly covered the land.

MEATUS, n. *mē-ā'tūs* [L. *mēātus*, a going, a passing]: in *anat.*, a natural passage or canal, wider than a duct. MEATAL, a. *mē-ā'lāl*, of or pertaining to the meatus.

MEAUX, *mō*: town of France, dept. of Seine-et-Marne, on the river Marne, 25 m. e.n.e. of Paris. It is a bishop's see, and its cathedral, begun in the 11th c., is a noble Gothic structure. Bossuet, the famous preacher, was bishop here, and is buried in the choir. Corn and flour from the water-mills on the Marne are sent to Paris in large quantities, and there are manufactures of cotton and other cloths, pottery, leather, saltpetre, etc. Pop. (1881) 12,525; (1886) 12,201; (1896) 13,520.

MECCA, *mēk'a* (*Om Al Kora*, Mother of Cities): one of the oldest towns of Arabia, cap. of the province of Hedjaz, and, as birthplace of Mohammed, the central and most holy city of all Islam. It is in 21° 30' n. lat., and 40° 8' e. long., 245 m. s. of Medina, about 65 m. e. of Jiddah, the well-known port on the Red Sea, in a narrow, barren valley, surrounded by bare hills and sandy plains, and watered by the brook Wadi-Al-Tarafeyn. The city is about 1500 paces long and about 650 broad, and is divided into the Upper and Lower City, with about 25 chief precincts. The streets are broad and rather regular, but unpaved; excessively dusty in summer, and muddy in the rainy season. The houses, three or four stories high, are of brick or stone, ornamented with paintings, and their windows open on the streets. The rooms are much more handsomely furnished and altogether in a better state than is usual in the East; the inhabitants of M. making their living chiefly by letting them to the pilgrims (see HAJJ) who flock hither to visit the Beit Ullah (House of God), or chief mosque, containing the Kaaba (q.v.). This mosque, capable of holding about 35,000 persons, is surrounded by 19 gates surmounted by seven minarets, and contains several rows of pillars, about 20 ft. high and about 18 inches in diameter, of marble, granite, porphyry, and common sandstone, which at certain distances are surmounted by small domes. A great number of people are attached to the mosque in some kind of ecclesiastical capacity, as katibs, muftis, mueddins, etc. No other public place or building, sacred or profane, of any importance, is to be found in this city, which also is singularly destitute of trees and verdure of any kind. It is protected by three castellated buildings, and is governed by a sherif. The

population has, in consequence of the rapidly decreasing number of pilgrims, fallen off considerably of late, from more than 100,000 to hardly 40,000, who do not find the 100,000 annual pilgrims sufficient to keep them in the prosperity of former years. The trade and commerce of M. are insignificant; the chief articles manufactured there are chaplets for the pious pilgrims. The townspeople themselves are lively, polished, and frivolous, and, growing up amid an immense concourse of strangers from all parts of Asia, are generally able to converse in three or four eastern languages. The citizens do not bear a good repute for character, and M. is the well-known scene of scandalous vices. Respecting the history of M., it was known to Ptolemy as Macoraba, and first belonged to the tribe of the Kosaites, later to the Koreish. Mohammed, who had been obliged to leave it precipitately 622 (see HEGIRA), returned and conquered it 627. M. was taken by the Wahabites (1803), but given up again to the pasha of Egypt, Mehemed Ali (1833), whose son, Ibrahim, was made Sheik El Haram—'of the Sacred Place.' At present, however, M. is directly dependent on the sultan.

MEC'CA, BALM OF: balsam made from a plant, *Besem*, which grows abundantly near the city of Mecca: see BALSAM, or BALM OF GILEAD.

MECHANIC, a. *mě-kăn'ik*, generally MECHAN'ICAL, a. *-i-kāl* [L. *mechanicus*; Gr. *mechanikos*, of or belonging to mechanics—from Gr. *mechănē*, a machine: F. *mécanique*]: pertaining to machines or to the principles of mechanics; constructed or performed according to the laws of mechanics; physical, or not chemical; manual, or not mental; done by a machine; pertaining to artisans; done by mere force of habit; in *OE.*, mean, servile. MECHAN'ICAL, a. acting without intelligence or design. MECHAN'ICALLY, ad. *-kāl-lī*, without intelligence or design. MECHAN'ICALNESS, n. *-nēs*, the state of being mechanical. MECHANIC, n. *mě-kăn'ik*, a skilled workman; an artisan. MECHANICIAN, n. *měk'ăn-īsh'ăn*, one skilled in mechanics; a machine maker. MECHANICS, n. plu. *mě-kăn'iks*, science of the forces and powers and of their action on bodies, either directly or by the intervention of machinery (see below). MECHANISM, n. *měk'ăn-izm*, the structure of the parts of a machine, and the manner in which these are put together to answer its design; the parts composing a machine; action according to mechanic laws. MECH'ANIST, n. *-īst*, one skilled in the structure of machines; one of a sect of philosophers who refer all the changes in the universe to the effect of the mechanical forces. MECHANICAL CALCULATION (see CALCULATING MACHINE). MECHANICAL PHILOSOPHY, that philosophy which explains the phenomena of nature on the principles of mechanics; the result of observation and experiment. MECHANICAL POWERS, the simple instruments entering into the construction of every machine, however complicated (see below). MECHANICAL SOLUTION, the solution of a prob-

MECHANICAL POWERS.

lem by any contrivance not strictly geometrical, as by means of the ruler and compasses.—SYN. of 'mechanic, n.': mechanist; workman; operative; artificer; artist; machinist; mechanician; manufacturer.

MECHANICAL POWERS: simple implements, or elementary machines, entering into the construction of every machine, however complicated. Machines are instruments interposed between the moving power and the resistance, with a view of changing the direction of the force, or otherwise modifying it. The M. P. are usually reckoned as six in number, three being primary—the *lever*, *inclined plane*, and *pulley*; three secondary, or derived from the others—the *wheel-and-axle* (derived from the lever), the *wedge*, and the *screw* (both derived from the inclined plane). To these some add toothed wheels. For what is special to each machine, see its title: a few observations applicable to all are given here. 1. In treating of the theory of the lever and other M. P., the question really examined is, not what power is necessary to move a certain weight, but what power is necessary to balance it—what force at P, for instance (see **LEVER**, fig. 1), will just keep W suspended. This once done, it is obvious that the least additional force to P will suffice to begin motion. 2. In pure theoretical mechanics, it is assumed that the machines are without weight. A lever, for instance, is supposed to be a mere rigid line; it is also supposed to be *perfectly* rigid, not bending or altering its form under any pressure. The motion of the machine is also supposed to be without friction. In practical mechanics, the weight of the machine, the yielding of its parts, and the resistance of friction have to be taken into account. 3. When the effect of a machine is to make a force overcome a resistance greater than itself, it is said to give a *mechanical advantage*. A machine, however, never actually increases power—for that would be to create work or energy, a thing now known to be as impossible as to create matter. What is gained in one way by a machine is always lost in another. One pound at the long end of a lever will lift ten pounds at the short end, if the arms are rightly proportioned; but to lift the ten pounds through one ft., the short end must descend ten ft. The two weights, when thus in motion, have equal momenta; the moving mass multiplied into its velocity is equal to the resisting mass multiplied into its velocity. When the lever seems to multiply force, it only concentrates or accumulates the exertions of the force. The descending one-pound weight, in the case above supposed, may be conceived as making ten distinct exertions of its force, each through a space of one ft.; and all these are concentrated in the raising of the ten-pound weight through one ft. The principle thus illustrated in the case of the lever holds true of all the other M. P. 4. The object of a machine is not always to increase force or pressure; it is as often to gain velocity at the expense of force: see **LEVER**. In a spinning-factory, e.g., the object of the train of machinery is to

MECHANICS.

distribute the slowly working force of a powerful water-wheel, or other prime mover, among a multitude of terminal parts moving rapidly, but having little resistance to overcome. 5. The mechanical advantage of a compound machine is theoretically equal to the product of the separate mechanical advantages of the simple machines composing it; but in applying machines to do work, allowance must be made for the inertia of the materials composing them, the flexure of parts subjected to strains, and the friction, which increases rapidly with the complexity of the parts; and these considerations make it desirable that a machine should consist of as few parts as are consistent with the work that it has to do. 6. The forces, or 'Moving Powers,' by which machines are driven, are the muscular strength of men and animals, wind, water, electrical and magnetic attractions, steam, etc.; and the grand object in the construction of machines is, how, with a given amount of impelling power, to get the greatest amount of work of the kind required: see **WORK: FOOT-POUND**. This gives rise to a multitude of problems, some more or less general, others relating especially to particular cases—problems the investigation of which constitutes the science of Applied Mechanics. One of the questions of most general application is the following: If the resistance to a machine were gradually reduced to zero, its velocity would be constantly accelerated until it attained a maximum, which would be when the point to which the impelling force is applied was moving at the same rate as the impelling force itself (e.g., the piston-rod of a steam-engine) would move if unresisted. If, on the other hand, the resistance were increased to a certain point, the machine would come to a stand. Now the problem is, between these two extremes to find the rate at which the greatest effect or amount of work is got from the same amount of driving power. The investigation would be out of place here, but the result is, that the greatest effect is produced when the velocity of the point of application is one-third of the maximum velocity above spoken of. The moving force and the resistance should therefore be so adjusted as to produce this velocity.

MECHANICS: science which treats of the nature of forces and of their action on bodies, either directly or by agency of machinery. For the nature of force, see **FORCE**. The action of forces on bodies may be in the form of pressure or of impulse, and may or may not produce motion. When the forces are so balanced as to preserve the body affected by them in a state of equilibrium, their actions are investigated in that branch of M. called **STATICS** (q.v.); when motion is produced, they are considered under the head of **DYNAMICS** (q.v.), or *Kinetics*. The equilibrium and motion of fluids (including liquids and gases) are treated in the subordinate branches of **HYDROSTATICS** (q.v.) and **HYDRODYNAMICS** (q.v.); though the special terms **AEROSTATICS** (q.v.) and **AERODYNAMICS** (q.v.)—for which the comprehensive term **PNEU**

MECHANICS—MECHANICSVILLE.

MATICS (q.v.) is often used—are sometimes employed to designate those portions of the science of M. treating of the action of gaseous bodies.

The science of M. owes very little to the ancient philosophers. They were acquainted with the conditions of equilibrium on the lever—discovered by Archimedes—and had reduced the theory of all the mechanical powers, except the pulley and the inclined plane and its derivatives, to that of the lever, but this was nearly all. Archimedes, starting from the principle of equilibrium on the lever, struck out the idea of a centre of gravity for every body, and investigated the position of that point for the triangle, parabola, and paraboloid. Till the 16th c., the science remained stationary; Cardan, Marquis Ubaldi, and Stevinus—who was the first to give the correct theory of equilibrium on the inclined plane—then gave it a slight impetus; and the labors of Galileo, who introduced the expression of mechanical propositions in mathematical formulas, discovered the laws regulating the motion of falling bodies, and originated investigations concerning the strength of materials, placed the science on a broad and substantial basis. Torricelli, Descartes, Pascal, Fermat, Roberval, and Huyghens, on the continent, and Wallis and Wren, in England—the last three of whom simultaneously discovered the laws which regulate the collision of bodies—added each his quota to the *new science*, as M. was then called. In 1687 appeared Newton's *Principia*, in which first the complete experimental basis of the subject was laid down in a satisfactory manner, and the mechanical principles, which had been considered to act only at the surface of the earth, were shown to rule and direct the motions of the planets. Contemporary with Newton were Leibnitz, and the two elder Bernouillis, James and John, who, besides contributing greatly to advance the science, applied to it the newly invented differential calculus, which was found to be an instrument of immense power. From this time, a constant succession of illustrious men have prosecuted the study of theoretical M., or of subjects connected with it. The chief names are Daniel Bernouilli, Euler, D'Alembert, Clairaut, Lagrange, Laplace. Lagrange's *Mécanique Analytique* not only systematized the subject, but also enormously increased its power and range of application. The last great additions to the science are those made by Sir W. R. Hamilton (q.v.) under the name of the principle of *Varying Action*. The developments which this has received from Jacobi, Boole, Cayley, Liouville, Donkin, Bour, etc., form an extensive and difficult branch of applied mathematics, chiefly of the theory of simultaneous differential equations.

MECHAN'ICS, ANIMAL: see MOTION, ANIMAL.

MECHANICSVILLE, *mé-kăn'iks-vīl*, BATTLE OF: 1862, June 26; second of the so-called seven days' battles, by which McClellan, in command of the Army of the Potomac, effected his retreat from before Richmond, to Har-

MECHANOGRAPHY—MECHITARISTS.

risson's Landing, 1862, June 25—July 1. After the battle of Fair Oaks, 1862, May 31, a demonstration by Stonewall Jackson upon Washington, and a cavalry raid, by Gen. J. E. B. Stuart, around the right flank of the Union army, led McClellan to plan and carry out a retreat, by a flank movement, to the James river. June 25, Gen. Hooker had an action at Oak Grove, beyond Fair Oaks, in which he succeeded sufficiently to warrant pushing rapidly for Richmond. But McClellan recalled him, to carry out his plan of retreat. June 26, the Confederate force under Gen. D. H. Hill made a vigorous, but very ill-concerted attack on Fitz-John Porter, at Mechanicsville. Porter had no difficulty in repelling the enemy at every point, inflicting on them enormous loss—upon Gen. Longstreet's admission, between 3,000 and 4,000—while his own was less than 400. See CHICKAHOMINY, BATTLES OF THE.

MECHANOGRAPHY, *n.* *mĕk'ăn-ôg'ră-fî* [Gr. *mechănĕ*, a machine; *grapho*, I write]: the art of multiplying copies of any writing or work of art by the use of a machine. MECH'ANOGRAP'HIST, *n.* *-ôg'ră-fîst*, one who is skilled in mechanography.

MÈCHE, *n.* *māsh* [F.]: a bunch or pledget of charpie, cotton, or raw silk, for keeping open an ulcer or wound; applied by an instrument known as a portemèche.

MECHITARISTS, *mĕk-îl'âr-îsts*: congregation of Armenian monks who reside on the island of San Lazaro at Venice, but who have obtained a footing also in France, Austria, Turkey, Russia, etc. They derive their name from an Armenian, MECHITAR (i.e., the Comforter) DA PETRO (1676–1749), who, 1701, founded at Constantinople a religious society for the intellectual, moral, and spiritual improvement of his countrymen, and for diffusing a knowledge of the old Armenian language and literature. Subsequently, the M. removed to the Morea, and thence, on the conquest of that portion of Greece by the Turks 1715, to San Lazaro, which was granted to them by the Venetian government.—The order of M. acknowledge the supremacy of the Roman pontiff, and received formal papal recognition 1712. Their rule is like the Benedictine; in their service they use the Armenian language and the Syrian rite. Their most useful occupation is preparing and printing critical editions of the classic writings of Armenian literature, and of the Armenian version of the Bible; also old translations of works whose originals are lost—e.g., some works of Ephraem Syrus, Philo, and Eusebius: their editions are universally admitted to be the best and most correct. At San Lazaro they have a large library, rich in Armenian MSS.; and their station at Vienna (since 1810) has taken on the character of a learned “academy,” with distinguished honorary members not of the Rom. Cath. Church. They also issue a *journal*, much read throughout the Levant.—Compare Boné, *Le Convent de St.-Lazare à Venise, ou Histoire succincte de l'Ordre des Méchitaristes Arméniens* (Paris 1837).

MECHLIN—MECKLENBURG.

MECHLIN, n. *měk'lin*: a beautiful light Belgium lace made at *Mechlin*.

MECHLIN, *měk'lin*: or **MALINES**, *mă-lēn'*: one of the chief cities of the Belgian province of Antwerp, 15 m. s.s.e. of the city of Antwerp, on the navigable river Dyle. It has fine squares, noble buildings, and wide, regular streets, but is devoid of signs of animation and industry, having lost its former greatness, and fallen far behind all other Belgian cities in commercial enterprise and industrial activity. As the see of the cardinal-primate of Belgium, it still retains a degree of ecclesiastical importance, and possesses numerous churches, the most noteworthy of which is the cathedral of St. Romuald, a vast building, covering nearly two acres of ground, and adorned in the interior with many fine pictures and choice carvings. It was built between the 12th and 15th c., but one tower, 345 ft. in height, remains unfinished. The other objects most noticeable are the churches of St. John and of Our Lady, which contain works by Rubens; the town-hall, dating from the 15th c., and known as the Beyard; the Market Hall, an ancient building, with towers, erected 1340, and now used as a guard-house; the splendid modern archiepiscopal palace; and the monument to Margaret of Austria, erected 1849. M. has two clerical seminaries, an academy of painting, a gymnasium, and a botanical garden. It still retains some of the important lace manufactories for which it has been long noted, and manufactures caps and woolen goods, besides having considerable breweries. M. constitutes an important central point of junction for the entire Belgian system of railways. Pop. (1881) 43,354; (1901) 56,509.

MECHOACAN, n. *mě-kō'ă-kăn*: the root of a species of convolvulus producing a kind of white jalap—from *Mechoacan* in Mexico; the root of *Ipomœa jal'ăpă*.

MECKLENBURG, *měk'lén-bérg*; **DECLARATION OF INDEPENDENCE**: series of five resolutions adopted by a public meeting at Charlotte, cap. of Mecklenburg co., N. C., 1775, May 20 (some authorities say May 31), in view of a vote, Feb. 9, of the Brit. parliament, denouncing action in Mass. as rebellion. The resolutions denounced the action of parliament, declared the tie to Great Britain severed, protested the colonial right to independence, enjoined obedience to the laws as of colonial authority, and invested the delegates and militia officers with authority to keep the peace. By a sixth resolution it was ordered that the declaration be sent by express to congress at Philadelphia; and, for immediate purposes of peace and safety, a second series of 20 resolutions were adopted. The first series are credited to the pen of Dr. Ephraim Brevard, and the second were the result of action taken by Col. Thomas Polk, commander of the co. militia. This was doubtless the earliest declaration of Amer. independence; but it was only local, representing only the citizens of a single county. Its tenor was quite similar to that of the later national Declaration.

MECKLENBURG-SCHWERIN.

MECKLENBURG-SCHWERIN, *měk'lén-bûrch-shwă-rěn'*: grand duchy in n. Germany; bounded n. by the Baltic, e. by Pomerania, s. by Brandenburg, w. by Lauenburg; abt. 5,136 sq. m. Pop. (1900) 607,770. M. S. is watered by several rivers, most important of which are the Elbe and the Warnow; and has a great many lakes and ponds, yielding abundant supply of fish. The country is generally flat, though here and there intersected by low ranges of hills, and its surface is still extensively covered with wood, notwithstanding the great clearings which have been made in the forests within a century. Near the sea are large tracts of sand and morass; but, on the whole, the soil is good, and well adapted for the growth of corn or the rearing of cattle, which are the principal native industries. There is considerable commerce through Warnemünde (Rostock) and Wismar: there were, 1875, belonging to the two ports, 426 vessels, with a burden of 113,656 tons. The grand duchy is divided into the circles of Schwerin, Güstrow, Rostock, and Wismar; cap. Schwerin. The central and s.e. districts are the most densely peopled. The people of both the Mecklenburg duchies (Schwerin and Strelitz) are mostly of Slavonic origin, but amalgamation with their Saxon neighbors has largely Germanized the original race. The predominating form of religion is the Lutheran; Rom. Cath. and other churches numbering about 1,100 members, while there are more than 3,000 Jews. Much has been done of late in extending the educational organization of both duchies, though the lower classes do not yet have as many advantages as in most other districts of Germany. Besides the university at Rostock (q.v.), there are five gymnasia, and numerous burgher, parochial, and other schools. The troops of M.-S. number in time of peace 2,700 men, and on a war-footing 5,330. The principal towns are the cap. Schwerin, Ludwigslust, Rostock, Güstrow, and Wismar. The grand duke, whose powers are limited by a mixed feudal and constitutional form of government, has the title Royal Highness, and is styled Prince of the Wends and of Schwerin and Ratzeburg, Count of Schwerin, and Lord of Rostock, Stargard, etc. The two Mecklenburg duchies have provincial estates in common, which meet once a year, alternately at Malchin and Sternberg. This united chamber consists of 684 landowners and the representatives of 47 provincial boroughs; while the country people have no representation. There is no general budget for M.-S.; there are three entirely distinct systems of finance. The budget of the first system, called the administration of the sovereign, is estimated at about 12,000,000 marks; the second, the states administration, has but small resources to dispose of; the ordinary budget of the common administration of the sovereign and the states is somewhat more than 2,000,000 marks. The public debt was (1903) about 113,240,000 marks. M.-S. has two votes in the federal council, and six representatives in the imperial diet.

History.--The Mecklenburg territory, anciently occu-

MECKLENBURG-STRELITZ.

pied by Germanic, afterward by Slavonic, tribes, was finally subdued, in the 12th c., by Henry the Lion, Duke of Saxony, who, after thoroughly devastating the country, and compelling the small number of inhabitants remaining after the war to adopt Christianity, restored the greater part of the territory to Burewin, the heir of the slain Slavonic prince, Niklot, and gave him his daughter in marriage. The country at that period received its present designation from its principal settlement, Mikilinburg, now a village between Wismar and Bruël. In 1349 it was elevated into a duchy by Emperor Charles. Duke Johann Albrecht introduced the Prot. doctrines 1550, and his grandsons, Wolf-Friedrich and Johann Albrecht, founded the lines of Mecklenburg-Schwerin and Mecklenburg-Güstrow, which were, however, deprived of the ducal title 1627, in consequence of their adhesion to the Prot. cause, when the imperial gen. Wallenstein was proclaimed duke of all Mecklenburg. In 1632 Gustavus Adolphus of Sweden restored his kinsmen, the deposed dukes, to their domains. After various subdivisions of the ducal line into the branches of Schwerin, Strelitz, and others, and the successive extinction of several of these collateral houses, the Imperial Commission, at Hamburg, 1701, brought about a family compact, by which it was arranged that Schwerin and Güstrow should form one duchy, and Strelitz, with Ratzeburg and Stargard, Mirow and Nemerow, another independent sovereignty. After this, few events of importance occurred till the accession in Schwerin, 1785, of Friedrich Franz, who obtained the title grand duke 1815, and died 1837, after a long reign, which he had made highly conducive to the internal welfare and external reputation of his hereditary dominions. The reign of Friedrich Franz II., who succeeded his father Paul Friedrich, 1842, was disturbed by a contest between the nobles and the burgher and equestrian landowners, the former arrogating to themselves the exclusive right of electing members into the equestrian order, nominating to benefices, and monopolizing other prerogatives of the ancient feudal nobility. The revolutionary excitement of 1843 gave a fresh stimulus to the popular ferment, and the disturbances could be quelled only by the intervention of Prussian troops. Both as members of the N. German Confederation and of the empire, the two duchies have maintained their internal constitution much on the old footing.

MECKLENBURG-STRELITZ, *-strä'tits*: grand duchy in n. Germany, composed of two distinct portions of territory—viz., Stargard (much the larger division, e. of Mecklenburg-Schwerin) and the principality of Ratzeburg (between Mecklenburg-Schwerin and Lauenburg); more than 1,000 sq. m. Pop. (1900) 102,602. The country is flat, and similar in physical characters, to Schwerin, though its greater distance from the sea gives it a climate less humid and less changeable. Strelitz, as already observed, has one joint representative chamber

MECOMETER—MECONIC.

with Schwerin, but the lordship of Ratzeburg is not included in these estates, and is governed directly by the grand duke, who possesses considerable private domains, from which he draws large revenues. The grand duke gave Ratzeburg a representative constitution 1869. M.-S. has one vote in the federal council of the empire, and one representative in the diet. Its debt is about six million marks: For the history of M.-S., see MECKLENBURG-SCHWERIN.

The Mecklenburg duchies are essentially agricultural, 71 per cent. of the inhabitants being employed on the land. In M.-Schwerin 3,549 sq. m., and in M.-Strelitz 670 sq. m., are under cultivation. The cattle of the duchies are considered the best in Germany; the horses especially are in high esteem. The principal products are corn (exported to Scandinavian and British ports), cattle and sheep (sent to the markets of Hamburg and Berlin), wool, tobacco, butter, cheese, fish, fruit, hides, etc. The matricular contribution of both duchies toward imperial expenditure amounted 1880-1 to 979,098 marks, the share of M.-S. being 144,233.

MECOMETER, n. *mě-kõm'ě-tér* [Gr. *mēkos*, length; *metron*, a measure]: graduated instrument for measuring the length of new-born infants.

MECONIC, a. *mě-kõn'ík* [Gr. *mēkōn*, a poppy]: belonging to the poppy. MECONIC ACID ($C_7H_4O_7$), peculiar acid existing in opium, which, when good, yields from 6 to 8 per cent. of it. Both the acid and its salts assume a characteristic blood-red tint with persalts of iron, and this test, which is very sensitive, is employed by the toxicologist in searching for traces of opium. As, however, the alkaline sulphocyanides which exist normally in the saliva give a precisely similar tint with the persalts of iron, it is necessary to be able to distinguish the meconate of iron from the sulphocyanide of iron. A solution of terchloride of gold or of corrosive sublimate removes all doubt, by discharging the color of the sulphocyanide, but not affecting the color of the meconate of iron. MECONATE, n. *měk'õ-nāt*, a salt consisting of meconic acid and a base. MEC'ONINE, n. *-õ-nĭn*, a white substance contained in opium. MECONIUM, n. *mě-kõ'nĭ-ũm* [L. *mēcōnĭũm*]: thickened juice of the poppy, called opium. The term is applied also to the earliest matter discharged from the bowels of a new-born infant. It is of brownish-green or almost black color, acid to test-paper, but devoid of odor, and rapidly putrefying on exposure to air. It is usually regarded as a product of the fetal liver, but, according to Lehmann, it contains neither biliary acids nor bile-pigment. When examined under the microscope, it is found to consist of an abundance of cylinder epithelium of beautiful green tint, of mucus-corpuscles, and of fat, with which there is much cholesterine.

MEDAL.

MEDAL, n. *měd'āl* [F. *médaille*—from It. *medaglia*; mid. L. *medālīā* and *medalla*, any ancient coin, but originally simply a coin in value between one of a lower and a higher denomination—from L. *mēdiūs*, middle: comp. Icel. *midla*, to divide]: piece of metal in the form of a coin, not issued or circulated as money, but stamped with a figure or device to preserve the portrait of some eminent person, or the memory of some illustrious action or event—usually bestowed as a high honorary reward for merit. The name is applied sometimes to an ancient coin. **MED'ALLET**, n. *-lēt*, a small medal. **MED'ALLIST**, n. *-līst*, one who has gained a medal as a reward of merit; one versed in ancient coins or medals. **MEDALLIC**, a. *mě-dāl'lik*, pertaining to medals. **MEDALLION**, n. *mě-dāl'yūn* [F. *médailon*]: a large antique medal; the representation in a cast of a medallion; any circular or oval tablet (as in architecture) bearing a head, bust, figure, etc. *Note*.—It is also said that F. *médaille*, mid. L. *medālīā*, etc., are from mid. L. *metallēā*—from L. *metallum*, a metal—see Skeat and Brachet: the text agrees with Wedgwood.—*Medals* offer a study interesting in a historical and antiquarian view, and important as illustrating successive states of art. Like coins, medals belong to two periods, ancient and modern, separated by a wide interval. To the former belong those pieces issuing from the mint of ancient Rome, known as *medallions*, of the size of the aureus in gold, of the denarius in silver, and of the first or large brass in copper. They are generally supposed to have been struck on occasions similar to those on which medals are coined in modern times, on the accession of an emperor, on the achievement of an important victory, or as specimens of workmanship; but there are circumstances which countenance the belief that they were circulated as money. Medallions prior to the time of Hadrian are rare and of great value, one of the most beautiful and most famous being a gold medallion of Augustus Cæsar: from Hadrian to the close of the Empire they are comparatively common. Of the Roman medallions, some were struck by order of the emperors, some by the senate; the latter may be known by being inscribed with the letters S. C. The larger bronze medallions are of admirable workmanship. In some of them, a ring of bronze surrounds a centre of copper, and the inscription extends over both metals. No portrait of a person not princely occurs on any ancient medal—a remarkable fact, considering the numerous contemporary statues of poets, historians, and philosophers. The *Contorniatī* are bronze medals marked with furrows (*contorni*), distributed at the public games, and apparently also in use as money. Numerous medals and medallions were struck in the Greek provinces of the Roman empire, usually of less substance and thickness than those of Rome. The Sicilian medals are of fine workmanship, particularly one with a head of Ceres, and on the reverse a Victory crowning a figure in a car.

MEDAL.

Modern medals began in the 14th c., but few were struck prior to the 15th. Portraits of non-princely persons are freely introduced after the 16th c. An affectation of the classical detracts from their value as illustrations of contemporary life. Most European countries possess a succession of medals from the 15th c. onward. The best in design of the 15th c. medals are those wrought by Victor Pisani, of Verona, inscribed 'Opus Pisani Pictoris.' The medals of the popes form an unbroken series from the time of Paul II., pontiff 1464-71. Those that purport to be of earlier popes are known to be of later date. The reverse generally bears the cross-keys and mitre, and the obverse the head of the reigning pope. Some of the medals of Julius II., Leo X., and Clement VII. have an especial value, as having been designed by Raphael and Giulio Romano, and engraved by Benvenuto Cellini. A 16th c. medal of Sicily is probably the first instance in modern times of the use of a medal as a vehicle of political satire; it is directed by Frederick II. against his adversary, Ferdinand of Spain, whose head is on the obverse, with the inscription, 'Ferdinandus R. R. Vetus Vulpes Orbis'; and on the reverse a wolf carrying off a sheep, with 'Jugum meum suave est et opus meum leve.' Satirical medals were afterward common in the Low Countries. A medal representing Van Heubingen, the Dutch ambassador, in the character of Joshua arresting the course of the sun, is said to have so exasperated Louis XIV., who was understood to be typified by that luminary, as to cause the whole hostile force of France to be brought against Holland. Some of the Dutch medals are noted for the elaborate views, maps, and plans engraved on them. France produced few medals prior to the time of Louis XIV.; but there is a series illustrative of the chief events in the life of the Grand Monarque, and another devoted to the career of the First Napoleon. The Spanish medals begin with Gonsalvo about 1500. Scotland produced one of the earliest of modern medals, struck by David II., perhaps during his captivity in England, and formed on the model of the nobles of Edward III. English medals begin with Henry VIII., and from Edward VI. onward there is an unbroken succession of coronation medals. The Scottish gold coronation medal of Charles I. is the first medal struck in Britain with a legend on the edge. The medals of the Commonwealth and Charles II. are by Simon; those of Queen Anne record the achievements of Marlborough. Medals, in connection with NUMISMATICS (q.v.), are treated of by the various writers on that subject.

Medals in the present day are conferred by the sovereign or by a government, as marks of distinction for eminent worth or noble conduct, particularly for naval and military services. Such medals of honor are seldom of great intrinsic value, their worth depending on the associations connected with them. Military medals have ribbons attached, with clasps or small bars, each of which bears the name of a particular action. The Water-

MEDALLURGY—MEDEA.

loo medal is of silver, with the head of George IV. (prince regent), a winged Victory, and the words 'Waterloo,' 'Wellington;' it hangs from a crimson ribbon, with a narrow stripe of blue near each edge. The Crimean medal also is of silver. Good-service medals of silver were instituted 1830 and 31, and rules formed for their distribution among meritorious sailors, soldiers, and marines. The naval medal is worn suspended from a blue, and the military from a crimson, ribbon. Medals and decorations do not seem to have been ever conferred as rewards in the army or navy prior to the Commonwealth. The French military medal and the Sardinian war-medal were some time ago bestowed to a large extent on British officers, soldiers, seamen, and marines. The former exhibits the effigy of Napoleon III., surmounted by an eagle, and is worn from a yellow ribbon with green borders; the latter is charged with the cross of Savoy, and suspended from a sky-blue ribbon. No medal of honor from any foreign sovereign is allowed to be worn or accepted by any British subject without the sanction of the queen.

In the United States there is no restriction on making and issuing medals, which, besides being conferred by the govt. in honor of noble conduct, may be issued also by associations and by private persons.

MEDALLURGY, n. *měd'ăl-ěr-jī* [Eng. *medal*, and Gr. *ergon*, a work]: the act of making and striking medals and coins.

MEDDLE, v. *měd'l* [OF. *mesler* and *medler*, to meddle, to mingle: comp. It. *mischiare*; prov. Sp. *mesclar*, to mix]: to interpose and act in the concerns of others officiously; to touch or handle; to interfere; to intermeddle. MED'DLING, imp. *-ling*: ADJ. interposing officiously and impertinently. MEDDLED, pp. *měd'ld*. MEDDLER, n. *měd'lěr*, one who interferes officiously. MEDDLESOME, a. *měd'l-sŭm*, given to meddling; officious. MED'DLINGLY, ad. *-lī*.

MEDEA, *mē-dē'a*: in Grecian legend, a famous sorceress, daughter of Aëtes, King of Colchis, and of the Oceanid Idyia or of Hecate. She married Jason, leader of the Argonauts (q.v.), and aided him in obtaining the Golden Fleece. Jason, after his return home, being desirous to be revenged on Pelias for the murder of his parents and his brother, M. persuaded the daughter of Pelias to cut him in pieces and boil him, in order to make him young again. Jason and she fled to Corinth, where, after she had been his wife for ten years, he repudiated her, to marry Glauce or Creusa; and M., in revenge, sent by her son to her rival a poisoned robe or diadem, the virulence of which destroyed both her and her father. M. then slew the children which she had borne to Jason, and fled to Athens in a chariot drawn by dragons, which she obtained from Helios. There she was received by Ægeus, to whom she bore Medos; but afterward being compelled to flee from Athens, she took Medos to Aria,

MEDEAH—MEDHURST.

the inhabitants of which were thenceforth called Medes. She finally became immortal, and the spouse of Achilles in the Elysian Fields. This absurd and repulsive classic legend, doubtless originally one of the cycle of sun-myths, afforded material for many productions of the tragic muse, and subjects for the painter and sculptor, and even in modern times has been so employed.

MEDEAH, *mā-dlā'â*: town of Algeria, 43 m. s.s.w. of the town of Algiers. It comprises a walled town and suburbs, and is considered as one of the finest towns in Algeria. There is an Arab market every Friday. Under the Romans, M. was a military station. Pop. of city 5,000; total pop. of city, suburbs, and commune 15,500.

MEDELLIN, *mā-dēl-yēn'* or *mā-thēl-yēn'*: city of the United States of Colombia, S. America, cap. of the state of Antioquia; 50 m. s.e. of the city of Antioquia, between the ranges of the central and western Cordilleras. It is a beautiful town, 4,845 ft. above sea-level, and its climate is exceedingly pleasant. It is the entrepôt of trade for the surrounding district, and contains a population of about 40,000.

MEDE'OLA: see INDIAN CUCUMBER.

MEDFORD, *mēd'ford*: city in Middlesex co., Mass.; five m. from Boston, by branch of Boston and Me. r.r., or to west M. by Boston and Lowell r.r.; one of the oldest suburbs of Boston, formerly a seat of ship-building, and noted for production of rum. The plain toward Charlestown and Boston is compactly built, and occupied by business of varied character; the main street west is occupied chiefly by elegant residences; and the new west M. beyond is a growing centre which seeks separation from the old city. There is an extensive wooded, marshy, and hilly region northward, known as Middlesex Fells, which is sought to be preserved as a rural resort for Boston. M. has a superior class of residents, excellent schools and high schools, public library, fine Episc., Unit., Congl., Meth., Bapt., and Rom. Cath. churches; public buildings, and manufactories of rum, bricks, buttons, and crackers. Tufts College (q.v.), founded by the Universalist body 1853, on the extreme s. edge of M., has a growing repute. On its border is Mystic pond, which supplies Charlestown with water.—Pop. (1830) 7,537; (1890) 11,079; (1900) 18,244.

MEDHURST, *mēd'hērst*, WALTER HENRY, D.D.: 1796–1857, Jan. 24; b. London: missionary to the Chinese. A pupil of St. Paul's School, London, and trained as a printer, he was sent by the London Missionary Soc. to Malacca 1816; showed great linguistic powers; was ordained at Malacca 1819, and entered on an unexampled course of scholarly labors, first at Penang, then at Batavia (Java), 1822–30. He removed to Canton, China, 1839, and thence to Shanghai 1843, and prosecuted there very successful mission work until 1856. A visit to England, 1856, ended with his death, two days after reaching

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London. M. early mastered the Malay, Chinese, and Japanese languages. His exact learning contributed to a revision of the versions already made of the Bible into Chinese, and secured an almost perfect translation. Wholly consecrated to mission work, of extraordinary gifts, generous, genial, versatile, and strong, M. rendered services rarely paralleled. His numerous writings include *Chinese Repository* (20 vols. Canton 1838-51); *Chinese-English Dictionary* (2 vols. Batavia 1842-3); *Account of the Malayan Archipelago*; *China, its State and Prospects* (1838); *A Glance at the Interior of China* (1850); *Chinese Miscellanies* (3 vols. Shanghai 1849-53), and translations of the Chinese classic *Shu-King*, and of many other Chinese and oriental writings.

MEDIA: see MEDIUM.

MEDIA, *mē'dī-a*: in ancient times, the n.w. part of Iran, bounded by the Caspian Sea on the n., by Persia on the s., by Parthia on the e., and by Assyria on the w. The n. portion of the country is very mountainous; the south is rich and fertile. M. at present forms the Persian provinces of Azerbaijan, Ghilan, Mazanderan, and Irak-Ajemi, and the n. portion of Luristan. The Medians were in language, religion, and manners very nearly allied to the Persians. After they had shaken off the yoke of the Assyrians, their tribes united about B.C. 708, according to the common account, chose Dejoces (Kai-Kobad) for their chief, and made Ecbatana their capital. His son Phraortes, or Arphaxad, subdued the Persians. Cyaxares (Kai-Kaous), son of Phraortes, in alliance with Nabopolassar, King of Babylon, overthrew the Assyrian empire about B.C. 604, spread the terror of his arms to Egypt and the furthest bounds of Asia Minor, and vanquished the brigand hordes of Scythia, who had carried their ravages as far as Syria. He was succeeded by his son Astyage (Asdehak), who was deposed (B.C. 560) by his own grandson Cyrus (Kai-Khûsru), King of Persia; and from this time the two nations are spoken of as one people. Ecbatana, cap. of M., became the summer residence of the Persian kings. After the death of Alexander the Great (B.C. 324), the n.w. portion (*Atropatene*) of M. became a separate kingdom, and existed till the time of Augustus; the other portion, under the name of *Great M.*, forming a part of the Syrian monarchy. M. was on several occasions separated from Persia. B.C. 152, Mithridates I. took Great M. from the Syrians, and annexed it to the Parthian empire, and about B.C. 33 it had a king of its own, Artavasdes, against whom Mark Antony made war. Under the Sassanian dynasty, the whole of M. was united to Persia. It became, during the 14th and 15th c., the stronghold of the Turkoman tribes Kara-Koinlû, or 'Black Sheep,' and Ak-Koinlû, or 'White Sheep.'

In early times, the Medes were a warlike race, with enthusiastic love of independence, and distinguished for their skill with the bow. They were famed for their horsemanship, and it was from them that the Persians



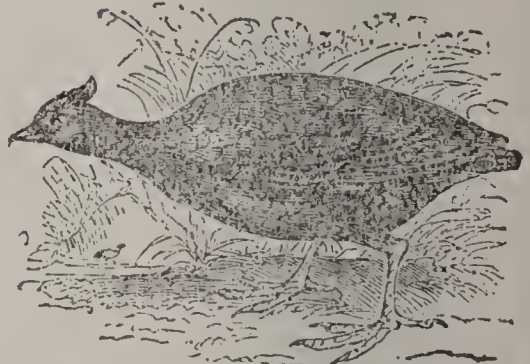
Brain-coral (*Meandrina cerebriformis*).



1, *Megalosaurus* restored; 2, Tooth of do.; 3 Jaw of do.



Star of the Medjidie.



Megapode.—Jungle-fowl (*Megapodius tumulus*).



Melpomene.—Antique in the Vatican,



Megatherium Restored,

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adopted this and other favorite exercises and acquirements. In subsequent times, they appear to have become effeminated by luxury. (See the works of Xenophon, Strabo, and Ammianus.)

MEDIÆ, n. plu. *mě'dī-ē* [L. *medius*, middle] : medial or middle parts.

MEDIÆVAL, or MEDIEVAL, a. *mě'dī-ě'vāl* [L. *mediūs*, middle : *ævum*, an age] : of or relating to the middle ages—a period extending from the eighth to the fifteenth century of the Christian era. MED'Æ'VALISM, n. *-vāl-izm*, a word applied to conformity to the style and manner prevalent during the three or four centuries before the Reformation.

MEDIAL, a. *mě'dī-āl* [F. *médial*, medial—from L. *mediūs*, middle], middle; denoting a mean proportion. MEDIAN, a. *mě'dī ān*, relating to or in connection with the middle of anything. MEDIANT, n. *mě'dī-ānt*, in *music*, the third above the key-note. MEDIAL PLANE or LINE, an ideal line or plane dividing a body longitudinally into two equal parts. *Note*.—MEDIAL LINE is strictly one of the two edges or boundaries of the *medial plane*.

MEDIASTINE, n. *mě'dī-ās'tīn*, or ME'DIASTI'NUM, n. *-tī'nūm* [F. *médiastin*, mediastine—from L. *mediastīnus*, one standing in the middle, a servant—from *mediūs*, middle] : a membraneous partition which divides the cavity of the chest into two parts, separating the two lungs from each other; a continuation of the pleura. ME'DIASTI'NAL, a. *-tī'nāl*, of or connected with the mediastinum.

MEDIATE, a. *mě'dī-āt* [F. *médiat*, mediate—from mid. L. *mediātus*, divided in the middle, middle—from L. *mediūs*, middle] : middle; being between the two extremes; intervening; acting by means : also, with cognate signification to *mediatized* (q.v.) : V. to interpose between parties at variance as the equal friend of both; to intercede. ME'DIATING, imp. ME'DIATED, pp. ME'DIATELY, ad. *-lī*, by a secondary cause; in such a manner that something acts between the first cause and the last effect. ME'DIATENESS, n. *-nēs*, the state or quality of being mediate. MEDIATION, n. *mě'dī-ā'shūn* [F.—L.] : the act of mediating or interposing; the acting between parties at variance with a view to reconcile them. MEDIATIZE, v. *mě'dī-ā-tīz*, to change from an immediate or direct relationship to an indirect one; to annex, as a smaller state to a larger contiguous one.—*Mediate* was the term descriptive of certain states of the old German empire, being lordships or possessions which were held by feudal tenure under one of the greater vassals, and so only *mediately* under the emperor as the supreme feudal lord. ME'DIATIZING, imp. ME'DIATIZED, pp. *-tīz* : ADJ. placed in a mediate relation to the emperor—said of the smaller states of the German empire, many of which were gradually reduced to this condition as the neighboring greater states increased in power; and amid the

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changes caused by the wars of the French revolution 1803-06, many small lordships were thus *mediatized* in which the greater states found a sort of compensation for their losses in other quarters. The term continued to be employed even when the feudal sovereignty of the German empire did not exist. At the Congress of Vienna, further mediatizations were effected; and at the present day the people of many of the smaller existing states are desirous of a similar change. The question of mediatization was one of those affecting the internal welfare of Germany which were most keenly agitated in 1848. ME'DIATIZA'TION, n. -tī-zā'shūn, the name given to the annexation of the smaller German states to larger contiguous ones 1806. MEDIATOR, n. mē'dī-ā-tōr, one who interposes between parties at variance in order to reconcile them; an intercessor; by way of eminence, a title of Christ Jesus as interceding Mediator for mankind with God as the Father, both with respect to his sacrifice of *Atonement* (q.v.)—making God and man *at one* again—and with respect to his continual intercession (q.v.). The Rom. Cath. Church represents *saints* as mediators of intercession, though not of atonement; but this view is rejected by Protestants. MEDIA'TRESS, n. fem. -trēs, or ME'DIATRIX, n. fem. -trīks, a woman who mediates or interposes for reconciliation. ME'DIATO'RIAL, a. -tō'rī-āl, pertaining to a mediator or to mediation; having the character of a mediator. ME'DIA'TORSHIP, n. -shīp, the office of a mediator. ME'DIATORY, a. -tēr-ī, mediatorial. MEDIATE AUSCULTATION, auscultation through a stethoscope—opposed to *immediate auscultation*, an auscultation made directly by the ear.—SYN. of 'mediator': propitiator; arbitrator; umpire; advocate; interceder.

MEDIC, or MEDICK, n. mēd'ik [Gr. *mēdikē*, of or from *Media*, in Asia: L. *mēdicā*], (*Medicago*): genus of plants of nat. order *Leguminosæ*, sub-order *Papilionaceæ*, nearly allied to CLOVER (q.v., *Trifolium*), but distinguished from that and kindred genera by the sickle-shaped, or, in most species, spirally twisted, legume. The species, very numerous, are mostly annual and perennial herbaceous plants, with leaves of three leaflets like those of clover, natives of temperate and warm climates. Many are found in s. Europe. They generally afford good green food for cattle, and some are cultivated like the clovers for this use, among which the most important is PURPLE M., or LUCERNE (q.v., *M. sativa*). Besides this, the BLACK M., NONSUCH, or LUPULINE (*M. lupulina*), is one of the most generally cultivated. It receives the name Black M. from the black color of the ripe pods, which are short, black, twisted, and arranged in oblong heads; and is often called Yellow Lucerne or Yellow Clover, from the color of its flowers. In habit and general appearance, it is very similar to *Trifolium procumbens*, or *T. Filiforme*. Where it is chosen, it is now sown frequently in mixture with Red Clover and Rye Grass, and is useful where a close turf is desired.

MEDICAL—MEDICAL CODES.

MEDICAL, a. *měď'ĩ-kāl* [F. *médical*, medical—from mid. L. *medicālis*—from L. *medicus*, a physician—from L. *medeor*, I heal or cure: It. and Sp. *medico*, a physician]: of or relating to the art of healing; medicinal; intended to promote the study of medicine, as a medical school. **MED'ICALLY**, ad. -*lĩ*. **MED'ICAMENT**, n. -*kā-měnt* [F.—L.], anything used for healing diseases or wounds. **MED'ICAMENT'AL**, a. -*měnt'āl*, relating to healing applications. **MED'ICAMENT'ALLY**, ad. -*lĩ*. **MEDICATE**, v. *měď'ĩ-kāt* [L. *medicātus*, healed, cured]: to give medicinal qualities to; in *OE.*, to heal. **MED'ICATING**, imp. **MED'ICATED**, pp.: **ADJ.** tinctured or impregnated with medicinal qualities. **MED'ICABLE**, a. -*kā-bl*, curable. **MED'ICA'TION**, n. -*kā-shŭn*, the act or process of impregnating with medicinal substances. **MED'ICATIVE**, a. -*kā-tiv*, tending to cure. **MEDICINABLE**, a. *mě-dĩs'ĩ-nā-bl*, having the power of a drug; able to heal. **MEDICINAL**, a. *mě-dĩs'ĩ-nāl* [F.—L.]: having the properties of medicine; used in medicine: **MEDIC'INALLY**, ad. -*nāl-lĩ*, in the manner of medicine; with a view to health. **MEDICINE**, n. *měď'ĩ-sĩn*, familiarly *měď'sĩn* [OF. *medicine*—from L. *medicinā*, the healing art, medicine]: anything administered for the cure or mitigation of disease; the art of curing or alleviating disease; the practice and faculty of medicine (see **MEDICINE**, **HISTORY OF: MEDICINAL PLANTS: MATERIA MEDICA**): **V.** in *OE.*, to apply medicine for cure; to cure by medicine. **MED'ICINING**, imp. **MED'ICINED**, pp. -*sĩnd*. **MEDICAL JURISPRUDENCE**, application of medical science to the determination of certain questions in courts of law (see **JURISPRUDENCE**, **MEDICAL**). **MEDICAL MAN**, a physician; a surgeon. **MEDICATED SPIRITS**, alcohol mixed or flavored with some strong ingredient. **MEDICINAL WATERS**, natural springs impregnated with certain medicinal qualities, and drunk by invalids. **MEDICO-LEGAL**, a. *měď'ĩ-kō-*, pertaining to law as affected by medical facts. **MEDICINE MAN**, among *N. Amer. Indians*, any person or thing that is wonderful, mysterious, or potent; a sorcerer or spirit doctor.

MEDICAL CODES: rules adopted by the medical profession to guide practitioners in relations with one another and with the public. What is known as the old code dates from Dr. Thomas Percival's *Medical Ethics, or a Code of Institutes and Precepts adapted to the Professional Conduct of Physicians and Surgeons* (Manchester, England, 1803). From 1832 to 1882 this code was in force generally in the U. S., until the Med. Soc. of the State of N. Y. adopted a new code, which was more or less accepted elsewhere. The reasons for the change were that the old code was arbitrary, inoperative, and obsolete; and was contrary to law in refusing recognition to certain legally authorized and reputable schools of practice. The portion of the new code which was at first strongly objected to by many practitioners, and by the Amer. Med. Assoc., was the clause on consultations, which set forth this rule: 'Members may meet in consultation legally qualified practitioners of medicine. Emergencies may

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occur in which all restrictions should, in the judgment of the practitioner, yield to the demands of humanity.' The opposition to this recognition of all schools of practitioners recognized by state law, and to such extreme liberality in consultation, was warmly maintained for two or three years, but at the 36th annual session of the Amer. Med. Assoc., New Orleans, 1885, that body adopted a declarative interpretation of certain points of the old code, which substantially brought it into harmony with the new.

MEDICAL DEPARTMENT, in the Navy: only of less importance than the same dept. in the army, in that the sea-service is much more healthful than service on land. After an action, the surgeon is in equal requisition in either case. For the Medical Dept. in the U.S. Navy, see UNITED STATES NAVY.

MEDICAL DEPARTMENT, of an Army: next to the commissariat, most important of all the non-combatant sections. The surgical treatment of the wounded in actual fighting, and, still more, the combat with disease engendered by crowding, unhealthy stations, and the reckless habits of the soldiery, necessitate a large medical staff; for, on an average of the whole army, it is found that the rate of sickness is at least triple that for the civil population.

In the British army, every battalion, when at home or in the temperate zone, has a surgeon and an assistant-surgeon; when in India or the tropics, another assistant-surgeon is added. In addition to these officers, there are numerous staff medical officers at all stations, who have charge of detachments, hospitals, etc. The medical dept. is governed by a director-gen., who is a member of the war office, and has charge of the surgical, medical, and sanitary arrangements of the army. See SURGEON. For the Medical Dept. of the U. S. Army, see UNITED STATES ARMY.

MEDICAL EDUCATION OF WOMEN: branch of professional education of recent development, but rapidly gaining recognition from seats of learning, and the support of the public in the employment of women physicians. In America, England, France, and Switzerland, the greatest advances have been made. The Woman's Med. Coll. of Penn., at Philadelphia, which dates from 1850, is now thoroughly equipped and increasingly successful. The New York Infirmary for Women and Children, founded by Dr. Emily and Dr. Elizabeth Blackwell, has for many years provided a full medical course for women, equal to that of the best schools for men, and under the auspices, as examiners, of some of the most eminent medical men of New York. In Boston, the New England Women's Hospital has held a similar position as a seminary of able women physicians. At Chicago, also, a Women's Hospital and med. coll. for women are maintained. The Univ. of Mich. has long had a very large med. dept., which is open to women,

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with some special separate instruction. The Univ. of Cal. also admits women to its medical school. In Europe, women may study medicine at the univs. of Paris, Zurich, Berne, Upsala, and Leyden. At St. Petersburg there was for a time a privilege given to women of receiving instruction in one of the military hospitals, and after this was suspended, the city authorities and private subscribers united, 1886, in a movement to provide for the medical education of women. In England an attempt was made, 1864, to establish a school for the thorough training of midwives, but the scheme failed. In 1869 Miss Jex Blake secured from the university court of Edinburgh permission for herself and four other ladies to matriculate in the medical school, but when it appeared that they would graduate, the Senatus Academicus, composed of the professors, refused them instruction, and procured a decision of the court of sessions sustaining the refusal. The five ladies sought next in London the privilege of medical study. Mrs. Garrett Anderson, M.D., who had become well known there as a medical practitioner, and Dr. F. E. Anstie interested themselves, and 1874, Aug. 22, at a meeting of eminent medical teachers at Dr. Anstie's house, it was determined to organize an independent medical school for women. The school was started on hardly more than £1,000, but with a teaching staff second only to that of University Coll., and was opened with 23 students, 1874, Oct. 14. Refusal, however, of admission to the wards of hospitals, and of licenses to practice, nearly defeated the movement, but in 1876 parliament empowered licensing bodies to give diplomas to women, and the next year the wards of the Royal Free Hospital in Gray's Inn Road were opened to women. The King and Queen's Coll. in Ireland agreed to examine women, and seven took diplomas. 1878, May 5, the London Univ., under a new charter, became open to women for all degrees, thus finally establishing the equality of women with men in medical study.

MEDICAL PRACTITIONER, in Law: in the absence of any special statutes, a person who publicly announces himself a practitioner in medicine and who undertakes to treat the sick either for or without a reward. In most of the states there are statutes regulating the right to practice medicine, the requirements generally being a diploma from some recognized medical college, or a certificate from a medical board of examiners; a public register is kept of the names of all legalized practitioners. Usually, when there are such statutes, it is a penal offense to practice without having fulfilled the statutory conditions. Formerly physicians could not sue for their fees, the policy of the law being to raise the relation between physician and patient above all that partook of a mercenary character. The law now implies a promise on the part of the patient to pay for the services rendered, and implies an agreement on the part of the physician that he possesses at least the ordinary

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skill of his profession, and makes him liable for any malfeasance on his part. The law leaves physicians free to accept or refuse a call upon them; but while their service is thus always voluntary at the start, they are under legal obligation to continue to treat the case and to use all necessary diligence and skill to bring it to a successful termination. A physician may, however, withdraw from a case for good cause and after proper notice to the patient. Medical practitioners are classed as physicians and as surgeons; but in law there is no distinction between physicians and surgeons: though their labors are different, their responsibilities are analogous. The relation between physician and patient is a confidential one; and generally, throughout the states, physicians are not allowed to disclose any information which they have acquired from their patients while attending them in a professional character.

MEDICAL SCHOOL, NETLEY: establishment for the technical education of medical officers for the British and Indian military service; school attached—for facilities of practical medical training—to the Royal Victoria Hospital, the great invalid depot for the whole army. There are four professors and four assistant professors; and usually about 40 medical candidates, who are admitted on competitive examination on the ordinary subjects of professional knowledge, and then pass through a **six-months' course of study.**

MEDICI.

MEDICI, *měd'e-chē* or *mā'de-chē*, **THE**: Italian family, among the most distinguished families of the Florentine republic; of high renown for statesmanship and for munificent patronage of literature and art. The M. owe their earliest distinction to their success in various branches of commerce, and the liberal public spirit in which they used their wealth. From the beginning of the 13th c., they took part in all the leading events of the republic; and from the period when *Salvestro de' M.* (d. 1388) attained the rank of gonfaloniere, 1378, the family rose rapidly to pre-eminence; though its almost regal greatness for several centuries is due especially to *Giovanni de' M.* (1360–1429, son of Bicci de' M.), of another branch of the family, who left to his sons, Cosmo and Lorenzo, a vast heritage of wealth gained in trade, beyond all previously known in the republic.

With **COSMO DE' M.** (Cosmo the Elder, 1389–1464), on whom was gratefully bestowed the title 'Father of his country,' began the glorious epoch of the M.; his descendants for many generations were absolute rulers of the nominal republic of Florence: while from *Lorenzo de' M.* (1395–1440) descended the collateral branch of the family, which, in the 16th c., obtained absolute rule over Tuscany. Cosmo's life—except during a short period, when the Albizzi and other rival families re-established a successful opposition against the policy and credit of the M.—was one uninterrupted course of prosperity. He continued the early policy of his family by leading the popular resistance to the chief families, such as the Albizzi, who had claimed dominance in the state. He was a munificent patron and a successful cultivator of art and literature, and did more than any sovereign in Europe to revive the study of the ancient classics, and to foster a taste for mental culture. He assembled around him learned men of every nation, and gave liberal support to numerous Greek scholars, whom the subjection of Constantinople by the Turks had driven into exile; and by his foundation of an academy—important in later Italian scholarship—for the study of the philosophy of Plato, and of a library of Greek, Latin, and Oriental MSS., he inaugurated a new era in modern learning and art. Yet though he held no definite office, and retained the name of a republican government, nominally confiding the executive authority to a gonfaloniere and eight priori or senators, he extinguished the freedom of Florence. He was always amassing wealth in trade and by intrigue; and always extending his influence, either by gentle methods, or by villainy, of which all testimony shows him to have been capable.

LORENZO the Magnificent (1449–92), grandson of Cosmo, who succeeded to undivided and absolute power in the state after the murder of his brother Giuliano, 1478, pursued, with signal success, the policy of his family, which may be characterized as tending to ennoble individuals, depress the greater families and exalt the less, and debase the nation at large. He encouraged literature and the

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arts, employed learned men to collect choice books and antiquities for him from every part of the known world, established printing-presses in his dominions as soon as the art was invented, founded academies for the study of classical learning, and filled his gardens with collections of the remains of ancient art; but when his munificence and conciliatory manners had gained the affection of the higher and the devotion of the lower classes, he lost no time in breaking down the forms of constitutional independence that he and his predecessors had suffered to remain. Some few Florentines, alarmed at the progress of the voluptuous refinement which was smothering every spark of personal independence, tried to check the corruption by an ascetic severity of morals, which gained for them the name *piagnoni*, or weepers. Foremost among them was the Dominican friar Girolamo Savonarola (q.v.), whose eloquent appeals to the people, for purity and righteousness and in favor of a popular and democratic government, threatened for a time the overthrow of the M.; but the jealousy of the Franciscans, and the vindictiveness of the papal court, averted their doom, and Savonarola's martyrdom restored outward tranquillity to Florence, and left the M. in undisturbed possession of absolute power. Lorenzo the Magnificent became the actual tyrant of Florence: cultivated in intellect and in taste, superb in manner, reckless in expenditure, now conciliatory and now cruel and murderous, as his selfish interests dictated, scandalously immoral, he yet governed so sagaciously that industry and commerce flourished, and material prosperity was carried to a high degree. He caused Pope Innocent VIII. to make his son, Giovanni de' M., a cardinal at the age of 14: this cardinal was afterward Pope Leo X.

PIETRO DE' M. (1471-1503), son and successor of Lorenzo in 1492, possessed neither capacity nor prudence; and in the troubles which the ambition of the princes and the profligacy of the popes brought upon Italy, by plunging her into civil and foreign war, he showed himself treacherous and vacillating alike to friends and foes. Lodovico Sforza, surnamed the 'Moor,' relying on the friendship, since the middle of the 15th c., between the Sforza family of Milan and the M., applied to him for assistance in establishing his claim to the duchy of Milan; but seeing that no reliance could be placed on Pietro, he threw himself into the arms of Charles VIII. of France. The result was the invasion of Italy by a French army of 32,000 men. Pietro, in hopes of conciliating the powerful invader, hastened to meet the troops on their entrance into the dominions of Florence, and surrendered to Charles the fortresses of Leghorn and Pisa. The magistrates and people, incensed at his perfidy, drove him from the city, and formally deposed the family of the M. from all participation in power. Pietro (drowned 1503, while with the French army) and several of his kinsmen made ineffectual attempts to recover their dominions, which were not restored till 1512.

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The elevation of GIOVANNI DE' M. (1475-1521), son of Lorenzo the Magnificent, to the papal chair, under the title Leo X., completed the restoration of the family to their former splendor; while the accession, 1523, of his cousin, GIULIO DE' M. (natural son of Giuliano, who was son of Lorenzo), to the pontificate as Clement VII. (q.v.), and the marriage of *Catharine de' M.* (1519-89), granddaughter of Pietro, to Henry II. of France (see CATHARINE DE' MEDICI), and her long rule over that country as regent for her sons, together with the military power of the cadet branch (descended from a younger brother of Cosmo the Elder, 'Father of his country'), threw a weight of power into the hands of the M., which rendered all attempts to maintain even a show of independence futile on the part of the Florentines. The faintest indication of republican spirit was at once crushed by the combined aid of the pope and Charles V.; and though the legitimate male line of Cosmo was extinct (with the exception of Pope Clement VII.), the latter gave, 1529, to ALESSANDRO DE' M., natural son of the last prince Lorenzo II., the rank of Duke of Florence. Alessandro was utterly profligate, abandoned to all shameless vices; and on his death, 1537, by assassination, without direct heirs, the pope raised to the ducal chair *Cosmo I.* (1519-74), son of Giovanni de' M. and Caterina Sforza, descendant of a collateral branch.

COSMO I., known as the Great, possessed the astuteness of character, the intellectual capacity, the resoluteness and courage, the love of elegance and taste for literature, but not the openness of manner and the liberality that had distinguished his great ancestors; and, while he founded the academies of painting and of fine arts, made collections of paintings and statuary, published magnificent editions of his own works and those of others, and encouraged trade, for the protection of which he instituted the ecclesiastical order of St. Stephen, he was implacable in his enmity, and scrupled not utterly to extirpate the race of the Strozzi, hereditary foes of his house. He put to death all who resisted his will, beheading of such, during his reign, 140 men and 6 women, besides sending his assassins into foreign countries to dispatch with daggers his fugitive enemies. His acquisition of Siena gained for him the title Grand Duke of Tuscany from Pius V.; and he died 1574, leaving enormous wealth and regal power to his descendants, who, throughout the next half century, maintained the literary and artistic fame of their family. Cosmo's son and successor, FRANCESCO I. (1541-87), was suspicious, treacherous, despotic, and scandalously immoral. The annals of the court and of the private life of the period are stained with bloody and disgraceful incidents. The daughter of Francesco or Francis, *Marie de' M.*, married Henri IV. of France (see MARIE DE' MEDICI).—His brother and successor, FERDINAND I. (1549-1609), was a clement and sagacious ruler, under whom the country prospered,

MEDICINA—MEDICINAL PLANTS.

In the 17th c., the race rapidly degenerated; and after several of its representatives had suffered themselves to be made the mere tools of Spanish and Austrian ambition, the last male representative of the line, GIOVAN GASTONE DE' M. (1670-1737), came into power, a weak, worn-out debauchee, son of Cosmo III. and of Louise d'Orleans, who was niece of Louis XIV. of France. His death left Tuscany poor, decayed, and exhausted under generations of misrule. His only sister, the Electress Palatine, last of the M. family, expired 1743. In accordance with a stipulation of the Peace of Vienna, the grand duchy of Tuscany passed to the house of Lorraine.

MEDICINA, *mā-dē-chē'nâ*: town of Italy, province of Bologna, 13 m. e. of the city of Bologna. It is a thriving place, with considerable trade and large markets. It has five churches and a theatre, and is surrounded by walls. It occupies the site of the ancient city *Claterna*, of which some remains are still visible. Pop. 3,000.

MEDICINAL PLANTS: plants of which some part or product is used in medicine. They are very numerous, and of most widely different orders. In some orders, particular properties are prevalent; other medicinal species are exceptional as to their properties in the orders to which they belong. Important properties and products are sometimes characteristic of a particular very limited group of species, as in the case of the *Cinchonas*. Many M. P. are used only by the people of the countries in which they grow; others—known as *officinal plants*—have a place accorded them in pharmacopœias and in the practice of educated medical practitioners. Many plants, however, are in high repute among the native physicians of India, which have not yet found a place in any western pharmacopœia, though a few of the most valuable have recently been introduced to notice in Europe. Of the plants rejected from the pharmacopœias, but retaining their place in rustic practice, some are really useful, and would be held in greater esteem if there were not preferable medicines of similar quality; others have owed their reputation merely to ridiculous fancies. Some M. P. are always gathered where they grow wild; others are cultivated (e.g., at Mitcham, near London) in order to have them in sufficient abundance. A great boon was very recently conferred on mankind in the introduction of *Cinchona* (q.v.) trees into India, Ceylon, and Java, where their cultivation has been begun with every prospect of success, securing a continued supply of Peruvian bark and of quinine, their increased abundance, and a diminution of their price.

Among the most valuable books on M. P. are Hayne's *Beschreibung der in Arzneikunde gebräuchlichen Gewächse* (1805-46); Nees von Esenbeck, Weihe, Walter, and Funke, *Sammlung officineller Pflanzen* (1821-33); Bentley and Trippen, *Medicinal Plants* (4 vols. London 1877). Works on *Materia Medica*, such as Pereira's (new ed. 1872), also are valuable.—See PHARMACOPŒIA: MATERIA MEDICA.

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MEDICINE, HISTORY OF: account of the culture and advancement of the healing art. There is reason to believe that Egypt was the country in which first the art of medicine, as well as the other arts of civilized life, was cultivated with success, the offices of the priest and the physician being probably combined in the same person. In the writings of Moses, there are various allusions to the practice of medicine among the Jews, especially with reference to the treatment of leprosy. The priests were the physicians, and their treatment aimed mainly at promoting cleanliness and preventing contagion. Chiron (q.v.), the centaur, is said to have introduced the art of medicine among the Greeks; but the early history of this is entirely legendary. See **ÆSCULAPIUS**.

With a passing allusion to the names of Pythagoras, Democritus, and Heraclitus, who in their various departments may be regarded as having advanced the art of medicine, we arrive at the time of Hippocrates (q.v.). His advance was so great that no attempts were made for some centuries to improve on his views and precepts. His sons, Thessalus and Draco, and his son-in-law, Polybius, are regarded as the founders of the medical sect called the Hippocratean or Dogmatic school, 'because it professed to set out with certain theoretical principles which were derived from the generalization of facts and observations, and to make these principles the basis of practice.'

The next notable point in the history of medicine is the establishment of the school of Alexandria, by the munificence of the Ptolemies, about 300 years B.C. Among the most famous of its medical professors are Erasistratus and Herophilus. Erasistratus was pupil of Chrysippus, and probably imbibed from his master his prejudice against bleeding and against active remedies, preferring to trust mainly to diet and to the *vis medicatrix naturæ*. It was about this time that the Empirics formed themselves into a distinct sect, and became the declared opponents of the Dogmatists. The controversy, says Bostock, *History of Medicine*, really consisted in the question, how far we are to suffer theory to influence our practice. While the Dogmatists, or, as they were sometimes styled, the Rationalists, asserted that, before attempting to treat any disease, we ought to make ourselves fully acquainted with the nature and functions of the body generally, with the operation of medical agents upon it, and with the changes which it undergoes under the operation of any morbid cause, the Empirics, on the contrary, contended that this knowledge is not obtainable, or, if obtainable, not necessary; that our sole guide must be experience, and that if we step beyond this, as gained either from our own observation or from that of others on whose testimony we can rely, we are always liable to fall into dangerous, and often fatal, errors. According to Celsus, who gives an excellent account of the leading opinions of both sects, the founder of the Empirics was Serapion of Alexandria,

said to be pupil of Herophilus. At this period, and for centuries subsequent to it, all physicians were included in one or other of these rival sects, and, apparently, the numbers of the two schools were about equal.

We learn from Pliny that medicine was introduced into Rome at a later period than the other arts and sciences. The first person who seems to have made it a distinct profession was Archagathus, a Peloponnesian, who settled at Rome about B.C. 200. His treatment was so severe and unsuccessful that he was finally banished; and we hear of no other Roman physician for about a century, when Asclepiades of Bithynia acquired great reputation. His popularity depended on his allowing his patients the liberal use of wine and of their favorite dishes, and in all respects consulting their inclinations and flattering their prejudices. He was succeeded by his pupil Themison of Laodicea, founder of a sect called Methodics, who adopted a middle course between the Dogmatists and Empirics. During the greater part of the first two centuries after Christ, the Methodics were the preponderating medical sect, and they included in their ranks C. Aurelianus, some of whose writings have come down to us. They then parted into various sects, of which the chief were the Pneumatics, represented by Aretæus of Cappadocia, whose works are still extant; and the Eclectics, of whom Archigenes of Apamea was most celebrated. But the most remarkable writer of this age is Celsus (q.v.), not far from the time of Christ, whose work *De Medicina* gives a sketch of the history of medicine till his time, and the state in which it then existed. He is remarkable as the first native Roman physician whose name has been transmitted to us. The names of Andromachus, inventor of the Theriaca, a preparation retained in modern pharmacopœias until the close of the 18th c., of Pliny the naturalist, and of Dioscorides, must have place in even the briefest sketch of the early history of medicine; but their contributions to its progress are insignificant when compared with those of Galen (A.D. 130—abt. 201: see GALENUS), whose writings were universally acknowledged as ultimate authority, until they were attacked and publicly burned in the 16th c. by the archquack, Paracelsus (q.v.). A learned and impartial critic, Dr. Aikin, after giving full credit to Galen for talent and acquirements, thus concludes: ‘His own mass and modern improvements have now in a great measure consigned his writings to neglect, but his fame can only perish with the science itself.’ As in the case of Hippocrates, his immeasurable superiority over his contemporaries seems to have acted as a check to attempts at further improvement.

The first names of any renown after the death of Galen are those of Oribasius, Alexander of Tralles, Ætius, and Paulus Ægineta, 4th to 7th c. They all were zealous Galenists, and those of their writings which are extant are mostly compilations from their predecessors, and especially from their great master. With the death of

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Paulus, the Greek school of medicine may be considered to have come to an end, for after his time no medical works of any merit were written in this language. The Arabian school was then beginning to rise into notice. The earliest Arabic writer on medicine of whom we have certain account is Ahrum, contemporary with Paulus. The most celebrated physicians of this school were Rhazes (9th c., the first to describe the small-pox), Avicenna (q.v.) (11th c., whose *Canon Medicinæ* may be regarded as a cyclopedia of all then known of medicine and the collateral sciences), Albucasis (whose works on the practice of surgery were for several ages regarded as standard authorities), Avenzoar, and Averrhoes (q.v.) (12th c., equally celebrated as physician and as philosopher). The works of Hippocrates and Galen, which, with those of Aristotle, Plato, and Euclid, were translated into Arabic in the 9th c., formed the basis of their medical knowledge; but the Arabian physicians did good service to medicine in introducing new articles from the East into the European materia medica—e.g., rhubarb, cassia, senna, camphor—and in making known the elements of pharmaceutical chemistry—e.g., a knowledge of distillation and of the means of obtaining various metallic oxides and salts.

Upon the decline of the Saracenic universities of Spain, which may date from the death of Averrhoes, abt. 1200, the only medical knowledge which remained was in Italy, where the school of Salerno acquired considerable celebrity, which it maintained till it was gradually eclipsed by the rising fame of other medical schools at Bologna—where Mondini publicly dissected two human bodies 1315—Vienna, Paris, Padua, etc. Contemporary with Mondini lived Gilbert, first English writer on medicine who acquired repute; and the next century gave birth to Linaere, who, after studying at Oxford, spent considerable time at Bologna, Florence, Rome, Venice, and Padua, and subsequently became founder of the London College of Physicians. It was in this (the 15th) c. that the sect of Chemical Physicians arose, who maintained that all the phenomena of the living body may be explained by the same chemical laws as those which rule inorganic matter. Although the illustrations and proofs which they adduced were utterly unsatisfactory, a distinguished physiological school of the present day is merging into a very similar view, though with far more cogent arguments in its support. The chemists of that age, with Paracelsus at their head, did nothing to advance medicine, except to introduce into the materia medica several valuable metallic preparations.

This period seems to have been prolific in originating new diseases. It is in the 13th, 14th, and 15th c. that we hear most of leprosy and of visitations of the plague in Europe. Until the 15th c., hooping-cough and scurvy were unknown or not accurately described; and it was toward the close of that century that syphilis was first recognized in Italy (from which country it rapidly ex-

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tended over all Europe), and that the Sweating Sickness (*Sudor Anglicanus*) made its first appearance in England.

In the 16th c., the study of human anatomy may be said to have been first fairly established by the zeal and labors of Vesalius (q.v.); and in this and the succeeding century were many physicians whose anatomical and physiological investigations materially tended directly or indirectly to advance the science of medicine. This was the epoch of Eustachius, Fallopius, Asellius, Harvey, Rudbeck, Bartholin, Malpighi, Glisson, Sylvius, Willis, Bellini, etc. Chemistry was then separating itself from alchemy, and advancing into the state of a science; and a combination was formed between its principles and those of physiology, which gave rise to a new sect of chemical physicians, quite distinct from the sect represented two centuries previously by Paracelsus. They considered that diseases were referable to certain fermentations in the blood, and that certain *humors* were naturally acid, and others naturally alkaline, and according as one or other of these predominated, so certain specific diseases were the result, which were to be removed by the exhibition of remedies of nature opposite to that of the disease. They were soon succeeded by the Mathematical Physicians, or the Iatro-mathematical school, of which Borelli, Sauvages, Keill, Jurin, Mead, and Freind were among the most celebrated. In proportion as this sect gained ground, that of the chemists declined, while the old Galenists were fast disappearing. To these rival sects must be added that of the Vitalists, which originated with Van Helmont (q.v.), and whose views, with some modifications, were adopted by Stahl and Hoffmann. The greatest physician of the 17th c. was, however, unquestionably Sydenham (q.v.), who, though inclining toward the chemical school, did not allow his speculative opinions regarding the nature of disease to interfere with his treatment.

The most eminent teacher of medicine in the early part of the 18th c. was Boerhaave, elected to the chair of medicine at Leyden 1709. Among the pupils of Boerhaave must be especially mentioned Van Swieten, whose commentaries on the aphorisms of his master contain a large and valuable collection of practical observations, and Haller (q.v.), father of modern physiology; while among the most celebrated opponents of the Hallerian theory, that irritability and sensibility are specific properties of the muscular and nervous systems, must be mentioned Whytt and Porterfield, physicians of high reputation in Edinburgh—the former being prof. of medicine in the university.

Nearly all the distinguished physicians of the latter part of the 18th c. belonged to what may be termed the Cullenian school of medicine: for the doctrines of that celebrated physician, see CULLEN. His views were attacked with great acrimony by his former assistant, John Brown, founder of the Brunonian system of medicine. In England the views of Brown were regarded as

too purely theoretical, and did not acquire popularity; but in parts of continental Europe, especially in Italy, they were generally adopted, and became for a considerable time prevalent in several leading medical schools. To supplement this outline of the progress of medicine in the 18th c., reference may be had to the biographical sketches of Monro, Blane, the Hunters, Jenner, etc.

The 19th c. may be considered as the epoch of physiological experiment and clinical observation. The efficient laborers in the field of medicine during this century have been so numerous as to preclude a catalogue here, while an attempt to select the most celebrated would be invidious. Our *materia medica* has received a large number of most important additions, among which may be especially noticed quinine, morphia, strychnine, iodine and the iodides, the bromides, hydrocyanic acid, cod-liver oil, chloroform. The physical diagnosis of disease has been facilitated to an extent far beyond what the most sanguine physician of last century could have deemed possible, by the discovery and practical application of the stethoscope, the pleximeter, the speculum, the ophthalmoscope, and the laryngoscope; while chemistry and the microscope have been successfully applied to the investigation of the various excretions, and especially of the urine and its deposits. The discovery of vaccination as a means of preventing small-pox, though made (see JENNER) at the close of last century, may be regarded practically as belonging to the present, since considerable time elapsed before its value was generally recognized. The true and certain diagnosis between typhus and typhoid (or enteric) fever is due to living physicians; and the discoverers of Bright's disease of the kidneys and of Addison's disease of the suprarenal capsules, have only recently passed away. The treatment of many diseases, especially those of inflammatory nature, has been much modified, and in most cases improved, especially during the last quarter of a century. The victims to the lancet are far fewer than they were; and there is less chance of patients perishing from too copious administration of brandy. Observation of the depleting and the stimulating modes of treating inflammatory diseases, such as pneumonia and pericarditis, suggests that nature will often effect a cure even in spite of the interference of too energetic physicians.

The pathological anatomy of Rokitansky and Virchow (q.v.); the development of the methods of auscultation and percussion established by Laennec (q.v.); the antiseptic method of Lister (see CARBOLIC ACID: GERM-THEORY: PASTEUR), have brought advances whose value cannot be overestimated. See the histories of medicine by Sprengel, Hecker, Daremberg, Meryon, and Häser (3d ed. 1875).—[For historical notice of some systems of medical treatment which are not included in the scope of this article, see HOMŒOPATHY: HYDROPATHY.]

MEDIETATE LINGUÆ—MEDINA.

MEDIETA'TE LIN'GUÆ, JURY DE: see JURY.

MEDIEVAL, a.: see MEDIÆVAL.

MEDILL, *mē-dīl'*, JOSEPH: journalist; b. New Brunswick, Canada, 1823, April 6. His father removed 1832 to Stark co., O., where M. studied law and began practice. He started a journal at Coshocton 1849; established the *Leader* at Cleveland 1852, and aided to organize the republican party in O. 1854. The next year he settled in Chicago, becoming proprietor and one of the editors of the *Tribune*. 1864-74, while the paper was under the editorial control of Horace White, M. was less active in editorship. He served as member of the Ill. constitutional convention 1870, of the U. S. civil service commission 1871, and 1873 made a year's visit to Europe. On his return he bought Mr. White's interest in the *Tribune*, and continued in editorial control. D. 1899, March 16.

MEDINA, *mā-dē'nâ*, rather EL-MEDI'NA (the City), or in full, MEDINAT BASUL ALLA (City of the Apostle of God), or MEDINAT AL NABI (City of the Prophet); called also TABAH, TIBAH, etc. (the Good, Sweet, etc.), and mentioned by Ptolemy as Jathrippa: town in w. Arabia, the holiest city to Mohammedans next to Mecca, and the second capital of Hedjaz; about 270 m. n. of Mecca, and 140 n. by e. of the port of Jembo on the Red Sea. It consists of three principal parts—a town, a fort, and suburbs of about the same extent as the town itself, from which they are separated by a wide space (the Munakha). M. is about half the size of Mecca, and forms an irregular oval within an inclosure whose walls are 35-40 ft. high, and flanked by 30 towers—a fortification which renders M. the chief stronghold of Hedjaz. Two of its four gates—viz., the Bab Al Jumah (*Friday Gate*, in the eastern wall) and the Bab Al Misri (*Egyptian*)—are massive buildings with double towers. The streets, 50 to 60 in number, are deep and narrow, paved only in a few places. The houses are flat-roofed and double-storied, and are built of a basaltic scoria, burned brick, and palm-wood. There are few public buildings of any importance except the Great Mosque Al Haram (the Sacred), supposed to be erected on the spot where Mohammed died, and to inclose his tomb. It is of smaller dimensions than that of Mecca, being a parallelogram 420 ft. long and 340 ft. broad, with a spacious central area, called El Sahn, surrounded by a peristyle, with numerous rows of pillars. The Mausoleum, or Hujrah, itself is an irregular square, 50-55 ft. in extent, in the s.e. corner of the building, and separated from the walls of the mosque by a passage about 26 ft. broad. A large gilt crescent above the 'Green Dome,' springing from a series of globes, surmounts the Hujrah, a glimpse into which is attainable only through a little opening, called the Prophet's Window; but nothing more is visible to the profane eye than costly carpets or hangings, with three inscriptions in large gold letters, stating that behind them lie the bodies of the Prophet of Allah and

MEDINA DE RIO SECO—MEDINA SIDONIA.

the two caliphs—which curtains, changed whenever worn out or when a new sultan ascends the throne, are supposed to cover a square edifice of black marble, in the midst of which stands Mohammed's tomb. Its exact place is indicated by a long pearly rosary (Kaukab Al Durri)—still visible in 1855—suspended to the curtain. The Prophet's body is supposed to lie (undecayed) stretched at full length on the right side, with the right palm supporting the right cheek, the face directed toward Mecca. Close behind him is placed, in the same position, Abu-bekr, and behind him Omar. The fact, however, is, that the mosque was entirely reconstructed 711, was enlarged 781, was rebuilt after being burned 1256, and was almost completely reconstructed after a second fire 1431. These facts, with other reasons, make it doubtful whether the particular spot at M. really contains the Prophet's remains. That his coffin, said to be covered with a marble slab and cased with silver (no European has ever seen it), rests magnetically suspended in the air, is a silly story, invented by Europeans and not known to Mohammedan tradition. Of the fabulous treasures which this sanctuary anciently contained, little now remains. As in Mecca, a great number of ecclesiastical officials are attached in various capacities to the Great Mosque, as Ulemas, Mudarisin, Inaums, Khatibs, etc.; and not only they, but the townspeople themselves, live to a great extent only on the pilgrims' alms. There are few other noteworthy spots in M., except the minor mosques of Abu-bekr, Ali, Omar, Balal, etc. The private houses, however, surrounded by gardens, fountains, etc., have a pleasing appearance; and the city, though in decay, is yet a busy and agreeable place. Thirty Medresses, or public endowed schools, represent what learning there is left in the city, formerly famed for its scholars. Pop. estimated 16,000–20,000.

MEDINA DE RIO SECO, *mā-thē'nâ dā rē'ō sã'kō* (anc. *Forum Egurrorum*): town of Spain, province of Valladolid, 22 m. n.w. of the city of Valladolid; on the Sequillo, an affluent of the Douro. This place was a famous emporium in the 14th c., when its cloth and linen fairs were among the greatest in the kingdom; it is now of little importance. There are some remains of its former greatness, in its arcades, arches, ruins, etc. In 1808 the town was given up to pillage by Bessières. Pop. 5,100.

MEDINA SIDONIA, *mā-thē'nâ sē-dō'nē-â* (Arab. *Medinatu-Shidunah*, 'City of Sidon,' so called by the Moors because they conjectured it to be the site of the Phœnician *Asidon*): city of Spain, 25 m. e.s.e. of the city of Cadiz. It has a picturesque and splendid appearance at a distance; but within it is described as 'a whitened sepulchre full of decay.' It is of Moorish origin, and contains a beautiful Gothic church and extensive ruins of a castle. The town gives the title of duke to the descendants of the famous Guzman the Good, and is otherwise noted in history. There are manufactures of earthenware. Pop. 10,800.

MEDINE—MEDITERRANEAN.

MEDINE, n. *mě-dēn'* [Turkish]: a small coin and money of account in Egypt, value about the fortieth part of a piaster (q.v.).

MEDI'NET-EL-FAYUM: see **FAYUM**.

MEDIOCRE, a. *mě-dī-ō-kēr* [F. *médiocre*—from L. *mediocris*, middling, tolerable—from *medius*, middle: It. *mediocre*]: of moderate degree; middle rate: N. a person of middling, or but indifferent, talents or merit. **ME'DI-OC'RITY**, n. *-ōk'ri-tī* [F. *médiocrité*]: a moderate degree or rate; a middle degree. *Note*.—These words as now used imply disparagement, with a slight degree of contempt.

MEDIOLANUM, *mě-dī-ō-lā'nūm*: ancient capital of Gallie Cisalpina, now the city of **MILAN** (q.v.).

MEDITATE, v. *měd'i-tāt* [L. *meditatus*, considered, meditated upon: It. *meditare*; F. *méditer*]: to think on; to revolve or plan in the mind; to muse; to employ the thoughts closely. **MED'ITATING**, imp. **MED'ITATED**, pp.: **ADJ.** thought over; planned. **MED'ITA'TION**, n. *-lā'shūn* [F.—L.]: close and deep thought; a series of thoughts occasioned by any subject; continued serious thought. **MED'ITATIVE**, a. *-lā-tiv* [F. *méditatif*—from L. *meditativus*]: addicted to meditation; expressing meditation or design. **MED'ITATIVELY**, ad. *-tīv-ly*. **MED'ITATIVENESS**, n.—**SYN.** of 'meditate': to reflect; contemplate; ponder; consider; regard; intend; study; dwell on; ruminate; cogitate; design.

MEDITATIO FUGÆ, *měd-i-tā'shī-ō fū'jē*: phrase in Scotch law denoting an intention to abscond from the jurisdiction of the ordinary courts; used chiefly in reference to debtors. The acts abolish^{ing} imprisonment for debt in general expressly retain it in the case of **Meditatio Fugæ**: see **DEBT**, **IMPRISONMENT FOR**. For like cases under other systems of law, see **DEBTOR**, **ABSCONDING**.

MEDITERRANEAN, a. *měd'i-tēr-rā'ně-ān* [L. *medius*, middle; *terra*, land or earth: F. *Méditerrané*]: lying between two lands; inclosed by land: N. the sea lying between Europe and Africa. **MED'ITERRA'NEOUS**, a. *-ně-ūs*, mediterranean; inland.

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MEDITERRANEAN SEA, *mēd-ī-tēr-rā'wē-an*: named from its being inclosed by the continents of Europe, Asia, and Africa; one of the greatest inland seas in the world. Its length from e. to w. is about 2,100 m., its greatest breadth about 1,080, but it is divided into two great basins by the approach of the European and African coasts in its middle; area, inclusive of the Sea of Marmora, but exclusive of the Black Sea and Sea of Azov, abt. 1,000,000 sq. m. It is about 400 m. wide opposite the mouth of the Rhone, and 250 m. wide opposite the mouth of the Nile. It is connected at its w. end with the Atlantic Ocean by the Straits of Gibraltar, through which a strong current continually flows into the Mediterranean. Another strong current also flows into its n.e. end through the Hellespont, the Sea of Marmora, and the Bosphorus, from the Black Sea, which receives large supplies of fresh water; whereas the great rivers which fall into the M. itself are comparatively few, the principal being the Ebro, the Rhone, and the Po, from Europe; and the Nile, from Africa. There are indeed two currents through the Straits of Gibraltar—one superimposed upon the other: the lower current usually an outflow into the Atlantic; the upper current usually an inflow from the Atlantic. This arrangement, however, is variable to some extent with the tides, etc. Similarly, through the Dardanelles there is a lower outflow of dense, salt, warm M. water to the Black Sea; and an upper inflow of fresher, cooler Black Sea water into the Mediterranean. The M. receives no large river from Asia. The evaporation from the surface of the M. is, on the contrary, greater than from the surface of the ocean generally, owing to the heat from the African deserts and the shelter which mountains afford from the cold winds of the north. The surface temperature, dependent on the intensity of solar radiation, is in summer about 5° above that of the Mediterranean. By the expeditions for the scientific exploration of the Deep Sea, 1869 and 70, it has been ascertained that the effects of this surface heating are limited to a depth of 100 fathoms; at every depth beneath this, even down to 1,900 fathoms, the temperature of the M., unlike that of the Atlantic, is *uniform*, and stands about 54° or 55°. This is, in fact, the *winter* temperature of the entire contents of the basin, from the surface downward, and also the mean temperature of the crust of the earth in that region. In winter, the temperature of the M., and the Atlantic approximate very closely. In consequence, probably, of the greater evaporation, the water of the M., unlike that of inland seas in general, contains about $\frac{1}{6}$ th per cent. more salt than the Atlantic Ocean. Its specific gravity is almost everywhere greater than that of the Atlantic, being in the proportion of 1.0386 to 1.0283. Its color, when undisturbed, is a bright deep blue; but in the Adriatic a green, and in the Levant a purple, tinge prevails, while the dark hue of the Euxine is indicated in its name of 'Black Sea.' Different parts of the M. bear different names—as the

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Ægean Sea, the Ionian Sea, the Adriatic Sea or Gulf of Venice, etc. Its n. coast is very much broken with bays and peninsulas, and abounds in harbors, affording the inhabitants of s. Europe great advantages for commerce, of which the M. was the chief seat during all periods of history, till toward the close of the middle ages, when, after the invention of the mariner's compass, a spirit of maritime adventure sprang up, and the discoveries of the Portuguese and of Columbus led to the extension of commerce over the whole world. The commerce of the Egyptians, the Phœnicians, the Greeks and Romans, was almost entirely confined to this inland sea.

The depth of the M. is generally greatest in its w. basin, though the maximum depth known in the w. is 12,240 ft., and in the e. 12,900 ft. Near Nice, it is 4,200 ft. deep only a few yards from the shore. In many places it is 5,000 ft. deep and more. Between Marseille and Algiers, the depth is 7,200 to 9,600 ft.; between Naples and Sardinia, 9,000 to 12,000 ft.; between Alexandria and Cyprus, 5,400 to 6,600 ft. The depth in the Straits of Gibraltar is about 5,500 ft. It is highly probable that the coasts of Europe and Africa were once united here, and have been separated by some great convulsion; it is supposed also that land formerly stretched from Sicily to Cape Bon, in Africa, where now a ridge exists along which there is for the most part a depth of scarcely 200 ft., and in some places of little more than 40 ft., while on each side, at a short distance, the depth is more than 6,000 ft. The M. is subject to the w., n., and n.e. winds for more than two-thirds of the year, while in spring the s.e. and s.w. winds prevail. The most formidable of those winds peculiar to the M. is the *solano* or *levanter*. In the Gulf of Venice, the greatest tides rise about three ft., and in the Great Syrtis, five ft., but in most places the tides are scarcely observable. According to the measurements of Napoleon's Egyptian expedition (1799), the surface of the M. in the neighborhood of Alexandria was 24 to 30 ft. lower than that of the Red Sea at Suez; but more recent measurements have shown that the difference of level is inconsiderable, and that the mean level of the Red Sea is at most six inches higher than the Mediterranean.

Of the 643 species of European sea-fishes, 444 inhabit the M., some of which are peculiar to it. It has a greater number of species than the British and Scandinavian seas, but does not nearly so much abound in useful kinds. Tunny-fishing is extensive on some parts of its coasts. It is rich in red coral, which is procured in great quantity on the coasts of Provence, of the Balearic Isles, and of Sicily, but particularly on the coasts of Bona and Barca in Africa.

The shores of the M. are in many parts subject to frequent earthquakes. Besides the existing active volcanoes of Etna, Vesuvius, and Stromboli, there are many evidences of recent volcanic action, and instances have occurred of islands suddenly upheaved by it, where volcanic fires have appeared for a short time.

MEDIUM—MEDLEY.

MEDIUM, n. *mē'dī-ŭm*, **ME'DIUMS**, n. plu. *-dī-ŭmz*, and **ME'DIA**, n. plu. *-dī-ă* [L. *mediŭm*, the middle of a thing]: the middle place or degree between two extremes; means by which anything is accomplished, conveyed, or carried on; the space or substance in which bodies exist, or through which they move in passing from one point to another; in *painting*, the liquid vehicle with which the dry pigments are ground and made ready for the artist's use; in *animal magnetism* and *spiritualism*, the person through whom it is alleged certain spirits manifest themselves and transmit their communications to others. **CIRCULATING MEDIUM**, the instruments of exchange, as representing value in buying and selling—usually coin, and bank-notes convertible into coin on demand. **MEDIUM-SIZED**, being a size nearly between the smallest and largest.

MEDJIDIE, *mēd'jī-dī* or *mēj'ī-dī*: Turkish order, instituted 1852, and conferred after the Crimean campaign on British officers. It has five classes; and the decoration, which differs in size for the different classes, is a silver sun of seven triple rays, with the device of the crescent and star alternating with the rays. The first three classes suspend the badge round the neck, from a red ribbon having green borders, and the fourth and fifth classes wear it attached to a similar ribbon on the left breast.

MEDLAR, n. *mēd'lēr* [OE. *medle-tree*; OF. *meslier*, the medlar-tree: L. *mespilum*; Gr. *mespilōn*, a medlar], (*Mespilus*): genus of trees or shrubs of nat. order *Rosaceæ*, sub-order *Pomeæ*, having a 5-cleft calyx with leafy segments, nearly round petals, a large honey-secreting disk, and 2-5 styles, united together in the flower, but widely separated on the fruit, the upper ends of the bony cells of which are exposed. **COMMON M.** (*M. Germanica*), a large shrub or small tree, spiny in a wild state, but destitute of spines in cultivation, is a native of s. Europe and of temperate parts of Asia; and is seen in hedges and thickets in parts of England, though not indigenous there. It has lanceolate leaves, not divided nor serrated, solitary large white flowers at the end of small spurs, and somewhat top-shaped fruit, of the size of a small pear, or larger, according to the variety. The M. is much cultivated in parts of Europe. It is very austere in taste even when ripe, and is not eaten till *bletted*, when its tough pulp has become soft and vinous by incipient decay.

MEDLEY, n. *mēd'li* [OF. *medler*, to mix, to meddle with: F. *mêlée*; mid. L. *melleia*, medley, confusion]: a mixture; a mingled and confused mass of different ingredients; a miscellany. **CHANCE-MEDLEY** (which see), a mixture made at haphazard.

MÉDOC—MEDUSA.

MÉDOC, *mă-dōk'*: district in the French dept. of Gironde, famed for quantity and excellence of the wine produced here—including the most famous growths of Bordeaux (q.v.) wines—e.g., Château-Margaux, Château-Lafitte, and Château-Latour. The dist. lies on the left bank of the estuary of the Gironde, is 40 m. long, is occupied by low ridges of hills, and has for a port the small town Pauillac.

MEDULLA, n. *mě-dŭl'lä* [L. *medulla*, the marrow in the bones]: the fat substance or marrow in the long bones; the pith of a plant. **MEDUL'LAR**, a. *-lér*, or **MEDULLARY**, a. *mě-dŭl'lér-ī*, pertaining to marrow or pith. **MEDULLA OBLONGATA**, *ōb'lōng-gā'tă* [L. *oblongus*, long, oblong]: in *anat.*, the continuation of the spinal cord within the skull (see **BRAIN**). **MEDULLA SPINALIS**, *spī-nā'lis* [L. *spina*, the backbone]: the spinal marrow or cord (see **SPINAL CORD**). **MEDULLARY RAYS**, in *bot.*, the rays of cellular tissue seen in a transverse section of exogenous wood, and which connect the pith with the bark (see **EXOGEN** [*Exogenous Plants*]: **PITH**). **MEDULLARY SHEATH**, in *bot.*, a thin layer of vascular tissue which surrounds the pith in exogenous stems. **MEDULLARY SUBSTANCE**, the interior white portion of the brain.

MEDUL'LARY SARCO'MA: one of the synonyms for that variety of Cancer (q.v.) known also as encephaloid cellular cancer, medullary cancer, fungus medullaris, etc. It grows more quickly, distributes itself more rapidly, and attains greater bulk than any other form of cancer, tumors of this nature being often as large as a man's head, or even larger. Of all forms of cancer, it runs the quickest course, soonest ulcerates, is the most malignant, and causes death in by far the shortest time, often destroying life in a few weeks, or, at furthest, in a few months after its first appearance, unless it has been removed by an operation at an early stage.—When it ulcerates, fungoid growths form upon the surface; they are extremely vascular, and bleed on the slightest provocation. In this state, the disease has received the name of *Fungus hæmatodes*.

MEDUSA, n. *mě-dŭ'să*, **MEDUSÆ**, n. plu. *mě-dŭ'sē* [L. *Medusa*, in *anc. myth.*, a beautiful woman, having fine hair, which was turned into snakes, one of the three Gorgons (see **GORGON**): sea-animals, usually called sea-blubber, sea-nettles, or jelly-fish, whose usual form is that of a bell, with a gelatinous dome, and a polype hanging in the centre, with trailing feelers around the rim (see **ACALEPHÆ**: also, **GENERATIONS**, **ALTERNATION OF**). **MEDUSIFORM**, a. *mě-dŭ'sī-fawrm* [L. *forma*, shape]: resembling a medusa in shape. **MEDUSOID**, a. *mě-dŭ'soyd* [Gr. *eidos*, appearance]: like a medusa—used substantively to designate the medusiform gonophores of the hydrozoa; sea-blubbers.

MEDWAY—MEERANE.

MEDWAY, *měd'wā*: river of England, rising near the n. border of the county of Sussex, and, after a n.e. course of more than 50 m., joining the Thames at Sheerness. At Penshurst, 40 m. from its mouth, it becomes navigable. The chief towns on its banks are Maidstone, Rochester, Chatham, and Sheerness. Large vessels do not ascend above Rochester Bridge; but below that the river widens into an estuary, and forms an important harbor for the British navy.

MEEANEE, or **MIYANI**: village in Sinde, Hindustan, on the Indus, six m. n. of Hyderabad; celebrated as the scene of a great battle between Sir Charles Napier and the Ameers of Sinde, 1843, Feb. 17. Sir Charles's force, partly of Europeans, partly of natives, amounted to only 2,800 men; that of his foes to 22,000; yet the latter were totally routed, losing in killed and wounded 5,000 men. Sir Charles's loss was only 256. The result of this victory was the conquest and annexation of Sinde.

MEED, n. *mēd* [Goth. *mizdo*, reward, recompense: Ger. *miethe*, hire: comp. Gr. *misthōs*, pay; Gael. *meud*, degree, extent]: reward; recompense; in *OE.*, merit; desert.

MEEK, a. *mēk* [Goth. *muks*; Icel. *miukr*; Dut. *muyck*, soft, mild: Norw. *mykja*, to soften: comp. Gael. *meath*; L. *mitis*, meek]: mild of temper; given to forbearance under injuries; gentle; submissive. **MEEK'LY**, ad. *-lī*. **MEEK'NESS**, n. *-nēs*, mildness; gentleness.—**SYN.** of 'meek': mild; soft; bland; tame; yielding; pacific; unassuming; humble.

MEER, *mār*, **JAN VAN DER**: 1632-75; b. at Delft: Dutch painter. In 1653 he married Catherine Bolenes, whom, at his early death, he left with eight children. As an artist his originality was remarkable, in two contrasted styles, at different periods of his life: the earlier that of power, boldness, command of color, and wonderful expression of life, rivalling the style of Rembrandt; the other, belonging to his last 10 or 12 years, characterized by refined delicacy and subtlety, the colors paler and softer, the painting smooth and thin, forming such a contrast with the masculine vigor and brilliant color of the first period as to suggest calling him "the Protean painter" (Dr. Waagen) and "the Sphinx of Delft" (W. Bürger, or Thoré, his true name, in *Musées de la Hollande*, 1858-60). Van M.'s pictures were in many cases sold as by Rembrandt, De Hooch, or others; and only in recent years, since Thoré's researches, with Havard's and Obreen's, have his works, which are extremely rare, become properly known—after he had been forgotten for two centuries.

MEERANE, *mārâ-nēh*: prosperous manufacturing town of Saxony, circle of Zwickau, ten m. n. of the town of Zwickau. Until a few years ago, it was an unimportant, small country town; but it has recently increased rapidly in size and importance, through the development of its industrial resources. The manufactories

MEERE—MEERUT.

produce, almost exclusively, woolen and mixed fabrics; and employ about 15,000 looms, of which about 3,000 are in the town itself, and the rest in the vicinity. There are more than 100 manufactories, the yearly products of which are estimated more than \$10,000,000. A large export trade is carried on with England, France, and America, three of the principal firms having set up establishments in New York. There are also large tanneries in M. The town itself has within a few years been greatly improved. Pop. (1849) 7,345; (1858) 11,147; (1861) 13,626; (1880) 22,293; (1890) 22,429.

MEERE, or MERE, n. *mēr* [Dut. *meere*; Icel. *mæri*, a boundary: Lap. *mere*, a definite point]: in *OE.*, a boundary; a mark of division. MEERED, a. *mēr'ēd*, of or relating to a boundary.

MEERSCHAUM, n. *mēr'shūm* [Ger., sea-foam—from *meer*, the sea; *schaum*, foam]: a mineral forming a silicate of magnesia, manufactured into the bowls of tobacco-pipes; a tobacco-pipe made of the same. This mineral is found in many parts of the world. In Europe it is found chiefly at Hrubschitz in Moravia, and at Sebastopol and Kaffa in the Crimea; and in Asia it occurs abundantly just below the soil in the alluvial beds at Kittisch and Bursa in Natolia; and in the rocks of Eski-Hissar, in the same district, it is mined so extensively as to give employment to nearly a thousand men. M., having been found on the sea-shore in some places, in peculiarly rounded snow-white lumps, was ignorantly imagined to be the petrified froth of the sea, which is the meaning of its German name. Its composition is: silica, 60·9; magnesia, 26·1; water, 12·0. Almost all the M. found is made into tobacco-pipes, in which manufacture the Germans have long been pre-eminent. Vienna contains many manufactories, in which some very artistic productions are made; and pipes worth \$500, from the beauty of their designs, are not unknown. The French pipe-makers have lately used M., and have shown much taste. When first dug from the earth, M. is quite soft and soap-like to the touch; and as it lathers with water and removes grease, it is employed by the Turks as a substitute for soap in washing. The waste in cutting and turning the pipes was formerly thrown away, but it is now reduced to powder, mixed into a paste, and compressed into hard masses, which are carved into inferior pipes. This inferior product is frequently sold for the genuine.

MEERUT, or MERUT, *mē'rūt*, or MĪ'RATH: town of British India; chief town of the district and division of M.; on the Kalli Nuddi, about 42 m. n.e. of Delhi. Its most important edifice is the English church, a fine building, with 3,000 sittings and an excellent organ. The climate of M. is healthful. Pop. (1891) 118,760.—The cantonment—which has renewed since 1806 the life of this ancient ruined town, and has given it large increase of prosperity—is 2 m. n. of the town; on the opposite side of the

MEET—MEETING.

stream are quarters of the native infantry. Here, 1857, May 10, the native troops revolted, shooting their European officers, firing the bungalows, and massacring the European inmates without respect to age or sex.—The *district* of M. has 2,368 sq. m.; pop. (1881) 1,276,167.—The *division* of M. is in the N.W. Provinces; 10,947 sq. m.; pop. (1881) 5,141,204; (1891) 5,324,910.

MEET, a. *mēt* [AS. *mete*; Icel. *mati*, measure: AS. *gemet*, fit (see METE)]: fit; according to measure; suitable; qualified; proper. MEET'LY, ad. *-lī*, in a fit or proper manner; properly. MEET'NESS, n. *-nēs*, fitness.

MEET, v. *mēt* [Icel. *mot*, against; *mæta*, to meet: Goth. *gamotjan*, to meet: AS. *gemot*; Gael. *mod*, a meeting, an assembly]: to come together; to approach from opposite directions; to come face to face; to come in contact; to encounter unexpectedly; to assemble; to find or light upon* to receive; to suffer unexpectedly, followed by *with*: N. a meeting or assembly of huntsmen. MEET'ING, imp.: N. an interview; an assembly or congregation of people; a joining; a junction; a coming together for the purpose of fighting a duel. MET, pt. or pp. *mēt*. MEET'ER, n. *-ér*, one who meets. QUAKER MEETINGS (see FRIENDS, SOCIETY OF). MEET'ING-HOUSE, formerly in Britain a dissenting place of worship, and still sometimes used in regard to the church buildings of some denominations who prefer to restrict the term Church to its scriptural use for the congregation or the fellowship of faithful Christian people. TO MEET HALF-WAY, to make mutual concessions, as for the amicable settlement of a dispute.—SYN. of 'meeting, n.': assembly; congregation; convention; company; audience; auditory; conference; confluence; union.

MEET'ING: deliberative assemblage of people, with a view to some specified subject or to accomplish some specified purpose. The proceedings may begin with choice of a chairman or presiding officer, and consist in the proposing and seconding of resolutions, on which the voice or vote of the meeting is taken. The chairman, in addition to his deliberative vote, has often been deemed entitled to give a second or casting vote, thus giving a decision after his previous vote has brought the two opposing sides to an equality. The tendency now is to allow him only one vote, which he is expected to give as decisive in case of an existing tie or equal vote, rather than to create a tie; the usage, however, is not uniform on these points. Any number of persons may in this country or in Britain assemble for any purpose not in itself illegal; but use of force or violence, or any tendency toward it, may entitle the authorities to interfere with a meeting, as an unlawful assemblage. Meetings called, not officially, but by private arrangement, may be deemed a characteristically English and American institution; in most other parts of the world, the right of holding such assemblages is more or less restricted by law.

MEGA—MEGALITHIC.

MEGA, prefix, *měg'a* [Gr. *megas*, great; fem. form, *měgālē*]: among electricians and on the C. G. S. system (see **ELECTRICAL UNITS**), multiplication by a million: as employed in any of the natural sciences, great, large; sometimes **MEGAL**, *měg'āl*.

MEGACEROS, n. *mě-gās'ér-ōs* [Gr. *megas*, great; *keras*, a horn]: fossil or sub-fossil gigantic deer of Pleistocene marls and peat-bogs; often, but erroneously, termed the 'Irish elk.' The largest were 11 ft. high to the tips of the antlers. The M. was regarded as intermediate between the reindeer and the fallow-deer.

MEGADYNE, n. *měg'ā-dīn* [prefix *mega-*; Eng. *dyne*] a force of a million dynes.

MEGAFARAD, n. *měg-ā-fār'ād* [prefix *mega-*; Eng. *farad*]: a million of farads.

MEGALERG, n. *měg'al-ěrg* [prefix *megal*; Eng. *erg*]: work amounting to a million ergs.

MEGALESIAN, a. *měg'ā-lě'zhǐ-ăn* [L. *megalēsius*—from Gr. *měgālē*, great, a surname of Cybele]: pertaining to games in honor of Cybele, the mother of the gods, in ancient Rome.

MEGALETHOSCOPE, n. *měg-al-ěth'o-skōp* [Gr. *megas*, *měgālē*, great; *skopeō*, I see]: an improved form of stereoscope invented by Ponti, in which the photograph is considerably magnified and an increased appearance of sphericity obtained. It is so arranged that the object may be viewed by direct or reflected sunlight or by artificial light.

MEGALICHTHYS, n. *měg'ā-lik'thīs* [Gr. *měgālē*, great; *ichthus*, a fish]: genus of fossil heterocercal ganoid fishes, named from their large size, compared with the other fish of the period. They were covered with large, strong rhomboid scales composed externally of brilliantly polished brown enamel, usually granulated as in the scutes of the recent crocodile. These scales have been found as large as five inches in diameter. The head was defended by similar strong plates, and the jaws were furnished with immense laniary teeth, of a size rarely attained, even in the largest modern reptiles, and so closely resembling them that they were for some time considered as having belonged to some crocodilean animal. These teeth—specimens of which have been found measuring four inches long and two broad at the base—were smooth at the point, had a long furrowed root and a hollow base, in which the new tooth was prepared. Numerous smaller teeth were scattered over the jaw, among the large ones. The fish of this genus must have been the terror of the seas they inhabited. Their strong skeleton, large tail, powerful head, and ferocious jaws remarkably suited their carnivorous habits.—Three species have been described from the carboniferous strata of Edinburgh, Glasgow, and the centre of England.

MEGALITHIC, a. *měg'ā-lith'ik* [Gr. *megas*, great; *lithos*, a stone]: formed of large stones.

MEGALO—MEGAPODIDÆ.

MEGALO, prefix, *měg-a-lō* [Gr. *megas*, fem. *měgālē*, great]: same as **MEGA** (q.v.).

MEGALONYX, n. *měg'ă-lōn'iks* [Gr. *měgālē*, great; *onux*, a nail or claw]: in *geol.*, a huge edentate mammal, found chiefly in the Upper Tertiaries of S. America—so named from the great size of its claw-bones: see **MEGATHERIUM**.

MEGALOSAURUS, n. *měg'ă-lō-saw'rūs* [Gr. *měgālē*, great; *sauros*, a lizard]: genus of fossil Dinosaurians, or land-saurians, of gigantic size and carnivorous habits, whose remains occur in the rocks of the Oolite period. The huge body of the animal was supported on four large and strong unguiculate limbs; specimens of the femur and tibia have been found measuring each nearly three ft., giving a total length of almost two yards to the hind leg; and a metatarsal bone 13 inches long shows that the foot had corresponding magnitude. The sacrum was composed of five vertebræ anchylosed together, as in the other Dinosaurs. Buckland calculated that the megalosaurus must have been 60 or 70 ft. long; but it is not likely that a reptile raised so high above the ground would have its body and tail so large in proportion to its limbs, as in our modern lizards or crocodiles. There seems good reason for accepting Owen's more moderate estimate of 30 ft. as its whole length. A fragment of the lower jaw, containing several teeth in position, tells of its carnivorous habits. Only a single species has been referred to this genus. Its remains are abundant in the Stonesfield slate, in the lower Oolite of Gloucestershire, England, and in the Wealden and Purbeck limestones.

MEGAPHONE, *měg'ă-fōn*: invention of Thomas A. Edison, designed to greatly augment the effect of the voice, making conversation possible between persons one or two miles apart, and causing a mere whisper to be heard at the distance of 1,000 ft. To effect this, a pair of large funnels, of paper, are mounted on a stand side by side. These should be 6 ft. 8 in. long, 27½ in. in diam. at the large end, and terminating at the small end in a flexible tube fitted for insertion in the ear. These form the ear-trumpet part, and a smaller funnel fixed between them forms the speaking-trumpet part.

MEGAPHYTUM, n. *měg'ă-fī'tūm* [Gr. *megas*, great; *phuton*, a shoot or plant]: a genus of Coal-measure stems—so called from the large size of their leaf-scars.

MEGAPODE, n. *měg'ă-pōd* [Gr. *megas*, great; *poda*, a foot]: the remarkable mound-making bird or brush-turkey of Australia: see **JUNGLE-FOWL**, of Australia.

MEGAPODIDÆ, *měg-ă-pō'dī-dē*: family of Birds, referred by some naturalists to the order *Grallæ*, but generally to the Gallinaceous order, being regarded as allied to the Curassows, etc. The feet are large and have large blunt claws. To this order belong the genera *Megapodius* (see **JUNGLE-FOWL**, of Australia), *Leipoa* (q.v.), *Talegalla* (q.v.), etc. The order is peculiar to New Holland and the neighboring islands.

MEGAPTERA—MEGATHERIUM.

MEGAPTERA, n. *mě-găp'těr-a* [mod. L.—from prefix *mega*; Gr. *pteron*, a fin]: the hump-backed whale.

MEGARA, *měg'a-râ*: city of ancient Greece, 20 m. from Athens, on the road to Corinth, with a district, Megaris, of 143 sq. m., on the isthmus connecting the Peloponnesus with continental Greece. The origin of its trade was Phœnician, and it was in early times one of the most important Greek commercial and colonizing centres. Its position gave it political importance, and B.C. 850–650 it was one of the most powerful cities of Greece, with numerous colonies, of which Byzantium and Chalcedon, on the Bosphorus, were chief. The education of the poorer classes created democratic socialism, and enabled Theagenes to become a popular tyrant, until expelled by the nobles, about B.C. 600. The strife of rich and poor which followed is pictured by a poet of M., Theognis. Athens meanwhile became strong, and made successful war on M. for the island of Salamis, close at hand. In the Greek wars which came later, M. suffered terribly from ravage and famine. A notable distinction of M. is its school of philosophy, known as the Megaric school, founded by Euclid (q.v.), disciple of Socrates.

MEGARIC SCHOOL: see **EUCLID**, of Megara: **MEGARIS**.

MEGARIS, *měg'a-rīs*: small mountainous region of Hellas, or Greece Proper, bounded by Attica, Corinth, and the sea. It formed the n.e. part of the Isthmus of Corinth. The cap. was MEGARA (q.v.), famous among the ancients for its white shell marble, and for a white kind of clay, of which pottery was made.

MEGASS', or **MEGASSE'**: see **BAGASSE**: **BEGASS**.

MEGASTHENES, n. *měg'as-thěnz*, or **MEGASTHENA**, n. *mě-găst'hěn-a* [mod. L.—from prefix *mega*-; Gr. *sthenos*, strength]: in *zool.*, in the classifications of James D. Dana, the second order of mammals. His arrangement of the Mammalia was: (1) Archontia (or Dipoda), containing man alone; (2) Megasthena, containing Quadrumana, Carnivora, Herbivora, and Mutilata; (3) Microsthenes, containing Cheiroptera, Insectivora, Rodentia, and Edentata; (4) Oöticoidea, including Marsupialia and Monotrema. See **MAMMALIA**: **ZOOLOGY**.

MEGATHERIUM, n. *měg'ă-thě'rĩ-ŭm* [Gr. *megas*, great; *thěrĩon*, a wild beast]: gigantic extinct quadruped of order Edentata, nearly allied to the sloth, found in the superficial stratum of the S. American Pampas. In structure, it is very near its modern representative, except that the whole skeleton is modified to suit the requirements of an immense heavy-boned and heavy-bodied animal, probably 18 ft. in length and 8 ft. in height. The appellation tardigrade, which Cuvier applied to the sloth, cannot be given to the M.: its limbs were comparatively short and very strong, and the feet adapted for walking on the ground, approaching in this respect nearer to the allied ant-eaters, but with this peculiarity, that the first

MEGATHERMS—MEGILP.

toe of each of the hind feet was furnished with a large and powerful claw, used probably as a digger, to loosen roots from the soil and enable the creature more easily to overturn the trees on whose foliage it browsed. The enormous development of the bones of the pelvis, the hind legs, and the tail, gave the animal great power when, seated on its hind legs and tail, as on a tripod, it



Skeleton of the Megatherium.

raised its fore legs against the trunk, and applied its force against a tree already weakened by having its roots dug up. The structure of the lower jaw indicates that the M. may have been furnished with a huge prehensile tongue like that of the giraffe, with which it stripped the foliage from the trees.

The remains of several allied genera of huge Edentata are associated with the M. in the Pampas deposits. They form the family MEGATHERIIDÆ of Owen, which includes *Myiodon*, *Megalonyx*, *Scelidotherium*, etc.—nine or more genera separated from M. chiefly by peculiarities in the dentition.

The modern sloth is a native of S. America, and the fossil remains of these immense creatures, which represented the sloth in the newer Tertiaries, have been found only in this continent, the past and present distribution of the family being the same.

MEGATHERMS, n. plu. *mĕg'ă-thĕrmz* [Gr. *megas*, great; *thermē*, heat]: plants requiring a high temperature; also called *macrotherms*.

ME'GERLE, ULRICH: see ABRAHAM-A-SANCTA-CLARA.

MEGILP, n. *mĕ-gĭlp'*, or MEGILPH, n. *mĕ-gĭlf'* [unascertained]: a compound of linseed-oil and mastic varnish,

MEGISTOTHERMS—MEHEMED ALI.

etc., used by artists as a vehicle for their colors; also spelled MAGILP.

MEGISTOTHERMS, n. plu. *mě-gīs'tō-thěrmz* [Gr. *megistos*, very great; *thermē*, heat]: plants requiring extreme or a very high degree of heat.

MEGOHM, n. *měg'ōm* [Gr. *megas*, great, and Professor *Ohm*]: a measure of electrical resistance; one million ohms: see OHM.

MEGRIM, n. *mě'grīm* [F. *migraine*, megrim: Gr. *hemī-kranīā*—from *hemī*, half; *kranīōn*, the skull]: popular term for neuralgia occupying one-half of the head, usually only the brow and forehead of one side. It is often periodical, coming on at a certain hour, lasting a certain time, and then entirely disappearing for a fixed interval. It may be induced by any cause that debilitates the system; it not unfrequently attacks women who have suckled their children too long; or it may be associated with hysteria; or it may arise, like ague, from marsh miasma; and sometimes no exciting cause can be detected.—When associated with anæmia (paleness and general debility), it should be treated with the preparations of iron, the shower-bath, nourishing food, and plenty of exercise in the open air. When it is strictly periodical, quinine in full doses has been commended (the bowels being previously well cleared); and if the quinine fails, Fowler's solution of arsenic, under order of a physician, given in small doses (three minims in a wine-glassful of water), three times a day, after meals, will be almost sure to remove it.

ME'GRIMS AND VER'TIGO: terms usually applied to the condition of a horse which at work reels, and then either stands for a minute dull and stupid, or falls to the ground, lying for a time partially insensible. These attacks come on suddenly, are often periodical, are most frequent during hot weather and when the animal is drawing up a hill or exposed during heavy work to the full rays of a hot sun. Liability to megrims constitutes unsoundness, and usually depends on the circulation through the brain being temporarily disturbed by the presence of tumors. Horses subject to megrims are always dangerous. If driven at all, they should be used with a breastplate or pipe-collar, so as to prevent, as much as possible, pressure on the veins carrying the blood from the head; they should be moderately and carefully fed, and during hot weather have an occasional laxative.

MEHEMED ALI, *mā'hēm-ēd â'lē*, or MEHEMET ALI, *mā'hēm-ēt*, also MOHAMMED ALI, *mo-hām'ēd*, Viceroy of Egypt: 1769–1849, Aug. 2 (viceroy 1806–48); b. at Kavala, a little town in Macedonia. He entered the Turkish army at an early age; and 1799 was sent to Egypt at the head of a contingent of 300 troops, to co-operate with the British against the French invaders. Here his fine military qualities rapidly developed, and he at length became commander of the Albanian *corps d'armée* in Egypt. In

MEIAPONTE.

1806 he was recognized by the Porte as Viceroy of Egypt and Pasha of Three Tails; but was soon involved in disputes with the Mamelukes, who had long practically ruled Egypt. He terminated the struggle 1811, by the massacre of the greater number of these at Cairo. The rest fled to Upper Egypt, but were expelled by M. in the following year. They then took refuge in Nubia from their remorseless foe; but in 1820 he followed them thither, and they were utterly exterminated.

The Porte, in alarm at his growing power and with a view to break it, intrusted him with command of an expedition against the Wahabis (q.v.), a religious sect of Arabia. But the victories of his son, Ibrahim Pasha (q.v.), only rendered M. more powerful, and his authority extended over a great part of the Arabian peninsula. Shortly afterward he conquered Kordofan, added it to his dominions, and opened a great trade in black slaves from interior Africa. About this time he began to reorganize his army on something like European principles, built a fleet, and erected fortresses, military workshops, and arsenals. His ambition, however, received a severe check by the total destruction of his new navy at Navarino 1827. In 1830 the Porte conferred on him the government of Candia, but this did not satisfy him; and in the following year, on a frivolous pretext, he sent out an army for conquest of Syria, under Ibrahim Pasha, who, by his victory at Konieh 1832, Dec. 20, brought the Turkish government to the brink of ruin. The European powers interfered, and a treaty was concluded 1833, May 4, by which Syria was ceded to M., on condition of his acknowledging himself a vassal of the sultan. Neither of the belligerents was satisfied, and M. continued to plot in his usual crafty style, till Sultan Mahmud was obliged 1839 to declare war against his dangerous subject. The European powers again interfered, and M. saw himself compelled to give up all his claims to the possession of Syria, and to content himself with getting the pashalic of Egypt made hereditary in his family. If the infirmities of age had not begun to tell upon M., he might have re-established Egyptian nationality. He thoroughly cleared the country of robbers, from Abyssinia to the mouths of the Nile; he may almost be said to have introduced the cultivation of cotton, indigo, and sugar into the country. While Syria was under his rule, he increased to an immense extent the mulberry plantations, and consequently the cultivation of silk; and to crown all his efforts, he established in Egypt a system of national education. In his last years, he fell into a sort of religious dotage; and at last, 1848, resigned his viceroyship in favor of his son, Ibrahim Pasha (q.v.).

MEIAPONTÉ, *mā-ē-â-pōn'tā*: town of Brazil, province of Goyaz, about 80 m. e.n.e. of the town of Goyaz, on the river Almas. In the neighborhood are some gold mines; and the district produces millet, barley, cotton, tobacco, and sugar. Pop. 8,000.

MEIGS.

MEIGS, *měgz*, MONTGOMERY CUNNINGHAM: 1816, May 3—1892, Jan. 2; b. Augusta, Ga. He graduated at the U. S. Milit. Acad. 1836; entered the artil. branch of the army, but was transferred to the engineers 1837; was promoted 1st lieut. 1838, capt. 1853, col. 11th U. S. inf. 1861, May 14, and quartermaster-gen. and brig.gen. U. S. A. on the following day; and was retired 1882, Feb. 6. During 1836-41 he was employed chiefly in the building of Fort Delaware, and in the improvement of Delaware bay and river; 1841-49 was superintending engineer on the construction of Forts Wayne, Porter, Niagara, and Ontario; 1849-50 was in the engineers' bureau, Washington; 1850-52 superintended the construction of Fort Montgomery, N. Y.; and 1852-60 planned and constructed the Washington aqueduct, the new wings and iron dome of the national capitol, the extension of the post-office, and the completion of Fort Madison, Md. In 1860, Nov., he was ordered to Fla., to strengthen Forts Jefferson and Taylor, and 1861, Apr., was appointed chief engineer of the expedition to relieve Fort Pickens, Fla., then besieged by the Confederates. As quartermaster-gen. of the army, he had charge of the equipment and supply of all the great Union armies in the field during the civil war; was present at Bull Run 1861, July, and at the investment, bombardment, and battle at Chattanooga; was brevetted maj.gen., for services during the threatened invasion of Washington 1864, July; supplied and refitted Gen. Sherman's army at Savannah 1865, Jan.; and from the close of the war till his retirement was on inspection duty in Tex., Cal., Dak., Wyo., Ariz., and in various European cities. He was architect of the new pension building in Washington after his retirement, and was a regent of the Smithsonian Institution, and member of the National Acad. of Sciences.

MEIGS, RETURN JONATHAN: soldier: 1734, Dec. 17—1823, Jan. 28; b. Middletown, Conn. He brought an infantry company to the Amer. camp after the battle of Lexington, and served under Benedict Arnold, as major, in the expedition to Canada. He was captured at Quebec, but exchanged the next year, and then raised a regt., of which he was made col. 1777. 1777, May, he led 170 men against the Brit. force at Sag Harbor, L. I., and destroyed 12 vessels and made 90 prisoners—a success for which cong. voted him thanks and a sword. In Wayne's storming of Stony Point he led a regt. and gained honorable mention from Washington. He served through the war, and in 1788 was among the first settlers of O. From 1801 to his death he was in charge of the Cherokee agency, Ga. His journal of the Canada expedition is especially valuable.

MEIGS, RETURN JONATHAN: statesman: 1765, Nov.—1825, Mar. 29; b. Middletown, Conn. He was a graduate of Yale 1785, studied law and went to Ohio 1788, settled at Marietta, was commissioner from Gen. St. Clair to Detroit 1790, took part in Indian wars, was

MEINAM—MEISSEN.

chief-justice of the O. supreme court 1803-4, had military charge of the St. Charles district of La. 1804-06, and was supreme judge 1805-6; was judge of the U. S. dist. court of Mich. 1807-8; U. S. senator 1809, Jan. 6—1810, May 1; gov. of O. 1810-14; rendered important services in the war of 1812-15; was postmaster-gen. under Madison and Monroe 1814, Mar.—1823, Dec., and then lived in retirement at Marietta until his death.

MEINAM, *mā-e-nām'* or *mā-nām'*: the great river of Siam (q. v.).

MEINE, v. *mēn* [AS. *mengan*, to mix]: in *OE.*, to mix. MEINED, MEYNT, or MEINT, pp. mingled; mixed.

MEINE, or MEINY, n. *mē'nī* or *mī'nī* [OF. *mesnie*, a family or household, servants: OF. *maisné* or *mainsné*, younger child—from L. *minus natus* for *minor natu*, less by birth, a younger child]: in *OE.*, family; domestic servants; retinue: see MENIAL.

MEININGEN, *mī'nīng-én*: capital of the duchy of Saxe-Meiningen-Hildburghausen; town in a narrow valley, on the banks of the Werra. The ducal castle, built 1681, contains a fine library and several art collections. There is a fine 'English garden' here. M. has little trade. Pop. (1880) 11,227; (1885) 11,448; (1900) 14,518.

MEIOCENE: see MIOCENE.

MEIOPHYLLY, n. *mī-ōf'īl-lī* [Gr. *meiōsis*, decrease; *phullon*, a leaf]: in *bot.*, the suppression of one or more leaves in a whorl.

MEIOSIS, n. *mī-ō'sīs* [Gr. *meiōsis*, decrease]: a rhetorical figure, a species of hyperbole, representing a thing less than it is.

MEIOSTEMONOUS, a., or MIOSTEMONOUS, a. *mī-ō-stēm'ō-nūs* [Gr. *meiōn*, less; *stemon*, a stamen]: in *bot.*, a term applied to stamens less in number than the parts of the corolla.

MEIOTAXY, n. *mī-ō-tāks-ī* [Gr. *meiōn*, less; *taxis*, arrangement]: in *bot.*, the complete suppression in a plant of a set of organs, as the corolla or the stamens.

MEISSEN, *mīs'sén*: one of the oldest towns in the kingdom of Saxony; on the left bank of the Elbe, 15 m. below Dresden. Its chief building is the cathedral, finest Gothic church in Saxony, surmounted by an exquisite spire of open-work, and containing many monuments of very early times. There are here a number of brasses, some of them finer than any in England or Flanders. M. was founded 928 by Henry I. of Germany, as a bulwark of his German territories against the Slavonians, and was long the cap. of the markgrafdom of M. which was subsequently merged in the duchy of Saxony. Otto I. founded the cathedral. It was burned down at the beginning of the 13th c.; rebuilt 1266-93; since which time it has been twice destroyed by fire and restored. The castle, on a precipitous rock, was rebuilt 1471, and 1710 was converted into a porcelain factory,

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but has recently been restored to more dignified uses. Other manufactures are iron, machinery, pottery, and ivory carving. The commune of Cölln was united on 1901, Jan. 1. Pop. (1885) 15,474; (1900) 31,434.

MEISSONIER, *mā-so-ne-ā'*, JEAN LOUIS ERNEST: French painter: 1813, Feb. 21—1891, Jan. 31; b. Lyons; pupil of Léon Cogniet, in Paris, and very early produced works, as *Le Petit Hallbardier*, which his later fame has made valuable. He first exhibited, 1834, *Les Bourgeois Flamands*, but was earliest revealed by his *Le Petit Messager*, 1836, marked by extreme delicacy of execution and rare thoughtfulness. Until 1840 his work was modelled on the great Dutch painters, and 1840–50 there was still something youthful in his work, as, e.g., in *The Violoncello Player*. But soon after 1850 the talent of M. was mature, and he rose to the height of dramatic and historical painting. His *Les Bravos* gave an unsurpassable rendering of human villainy. In 1855 Prince Albert carried home to England, from the Exposition at Paris, M.'s *La Rixe*, a gift to the prince from Napoleon III. In it were displayed qualities which M. has never surpassed, though he has since immensely extended his field of vision, and has become a marvellous painter of light. M. is peculiar in his power to give character to single figures, or to groups, in repose or in violent action. His work shows great variety, is intellectual and intensely truthful, and is executed slowly. Three of the greatest of his pictures refer to Napoleon's campaigns—1805, or *Les Cuirassiers*, 1807, or *Friedland*, and 1814, or *Retraite de Russie*. Hardly below these is the *Napoleon III. at Solferino*. A small *Napoleon* which Mr. Ruskin bought about 1864 for £1,000 he sold 1882 for £6,000. In 1861 M. was elected a member of the Acad. of Fine Arts. He had obtained a third-class medal 1840, second-class 1841, and first-class 1843 and 48. In 1846 he was created a Kt. of the Legion of Honor, 1856 an officer, 1867 commander. At the Paris Exposition, 1885, he was given one of the grand medals of honor. In the year previous, a collection of about two-thirds of his pictures, which number in all about 200, was exhibited in Paris, shortly after the incident of the portrait of Mrs. Mackay, which that lady threw upon the fire. Several of the finest examples of M.'s work are in Amer. galleries.

MEISTERSINGERS, n. *mās'tēr-* [Ger., master-singers]: successors of the MINNESINGERS (q.v.).

MEITH, or MEATH, n. *mēth*: a boundary; a mark; a sign; a landmark.

MEK'HITAR, or MECH'ITAR: see MECHITARISTS.

MEKHONG, *mā-kōng'*, or MEIKHONG, *mā-e-kōng'*, or MAKIANG, *mā-kē-âng'*, or CAMBODIA, *kām-bō' dī-a*: great river of Cochin-China (q.v.).

MEKLONG, *mā-klōng'*: town of Siam, at the confluence of the Meklong river with the w. mouth of the Menam, 30 m. s.w. of Bangkok. The province furnishes salt for all the kingdom. Pop. of M. estimated 10,000.

MELA—MELANCHOLIA.

MELA, *mēla*, **POMPONIUS**: Latin writer—the first who composed a strictly geographical work; b. Tingentera in s. Spain; believed to have lived in the time of the Emperor Claudius, but nothing whatever is known concerning him. M.'s little compend., whose date was probably A.D. 43, is in three books, and is entitled *De Situ Orbis*. The text is greatly corrupted, on account of the abundance of proper names. There is lack of system, but the author shows a creditable research and discrimination in the use of authorities. The *editio princeps* appeared at Milan 1471; there are editions by Tschucke (1807), Weichert (1816), Parthey (1867). M. was translated into English as long ago as 1585.

MELACONITE, n. *mēl-āk'ōn-īt*, or **MELAC'ONIZE**, n. *-ōn-īz* [Gr. *melan*, black; *konis*, powder]: an impure black oxide of copper, occurring in veins in powdery masses. arising probably from the decomposition of other ores.

MELADA, n. *mēl'a-da* [Sp. pp. of *melar*, to candy—from L. *mel*, honey]: crude or impure sugar, as it comes from the pans, consisting of a mixture of sugar and molasses.

MELÆNA, n. *mēl-ē'nă* [Gr. *melan*, black]: in *med.*, the discharge of black blood from the bowels.

MELAIN, n. *mēl'ā-īn* [Gr. *melaina*, blackness]: black substance, resembling in character the black pigment of the eye, obtained from the so-called ink of the cuttle-fish. It is insoluble in water, alcohol, ether, and the alkaline carbonates, but dissolves in nitric and sulphuric acids.

MELAINOTYPE: see **MELANOTYPE**.

MELALEU'CA: see **CAJUPUT**.

MELAMPODE, n. *mēl'ām-pōd* [L. *melamp'ōdium*—from Gr. *melas*, black; *pous* or *poda*, a foot]: in *OE.*, black hellebore.

MELANCHO'LIA: disease involving exaggeration of the natural and legitimate feelings of grief, despondency, and apprehension, which become morbid where the emotion is without a cause, disproportioned to the actual cause, or so intense as to disturb and destroy the exercise of the other mental powers. This dejection and suffering is found associated with exalted sensations, or delusions as to the personal or physical condition of the individual, which originate in habitually cherishing certain impressions, in fixing the attention upon certain vital processes, which may be unhealthful, or which may become so by the very concentration of thought upon them. The patient lives in fear of death; in the conviction that he is differently or more exquisitely constructed than those around; that he labors under some foul or fatal disease; that he is destitute of strength or comeliness. This has been regarded as hypochondriacal melancholia—the *maladie anglaise*, and affects the early active life. Similar feelings are called forth in reference to the social position. There arises a dread of poverty and want. The victim is haunted by imaginary

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debts, obligations, speculations. He feels incapable of extricating himself. The poor, as well as the rich, entertain such doubt and dread. They starve, in order to husband their resources. This affection prevails at maturity—at the period of greatest activity and usefulness. Toward the decline of life—though encountered at every age—morbid depression often assumes the form of religious anxiety, despair, remorse. Moral statistics show that among the inhabitants of n. Europe the number of cases of M. exceeds those of mania; and it has been supposed that the rudiments of the malady may be detected in the original character, the temperament, and the habits of the race, as well as in the climate, domestic condition, and diet, by which these are modified. Defective blood nutrition, or anæmia, appears to be the physical state with which the great majority of cases of M. are connected, and to which all modes of treatment are directed. Powerful and permanent and depressing moral emotions act as effectively in arresting healthful digestion and alimentation as the use of injudicious food; or if the nourishment be proper, such circumstances as the respiration of impure air, or indulgence in intemperate or degraded tendencies, tend to render assimilation of food impossible. The aspect of the melancholiac corroborates the view of inanition and exhaustion as its cause. The surface is pale, dry, cold, attenuated, even insensible; the muscles are rigid; the frame is bent; the eyes sunk, and fixed or flickering; the lips parched and colorless. There is a sense of exhaustion or pain or impending dissolution. It has been remarked, that in proportion to the intensity of the internal agony is there an obtuseness or anæsthesia to wounds or external injuries. Such an immunity gives in lunatics an indifference to the most grievous forms of bodily suffering, and may explain the conduct of many reputed martyrs and even criminals under punishment.—Haslam, *Observations on Madness and Melancholy*; Esquirol, *Maladies Mentales*, t. i. p. 398; Crichton, *Inquiry into Nature and Origin of Mental Derangement*.

MELANCHOLY, n. *měľăn-kōľ-ĩ* [L. *melanchōliā*—from Gr. *melangchōliā*, black bile—from *melan*, black; *cholē*, bile: Sp. *melancolia*: F. *mélancolie*]: Dejection or depression of spirits; a gloomy state of mind: ADJ. dismal; dejected; calamitous; low-spirited; mournful. MEL'ANCHOL'IC, a. *-kōľ'ik*, depressed; dejected. MEL'ANCHOL'IA, n. *-kōľ'ĩ-ă*, a variety of insanity (see above).—SYN. of 'melancholy, a.': sad; dispirited; melancholic; gloomy; fanciful; unhappy; disconsolate; afflictive; hypochondriac or hypochondriacal; heavy; doleful; **sombre**; unfortunate.

MELANCHTHON.

MELANCHTHON, *mē-lānk'thon*, Ger. *mā-lānch'tōn*, PHILIP: Luther's fellow-laborer in the Reformation: 1497, Feb. 16—1560, Apr. 19; b. Bretten, in the Palatinate of the Rhine, now in the grand duchy of Baden. His name was originally Schwarzerd (black earth), of which M. is a Greek translation. He was educated at the Univ. of Heidelberg, where he took the degree Bachelor of Philosophy 1512. In the same year he went to Tübingen, studied theology, took the degree of Master, and 1514 gave lectures on the Aristotelian philosophy and the classics. About this time, he published a Greek grammar. On his relative Reuchlin's recommendation, he was appointed, 1518, prof. of the Greek language and literature in Wittenberg. He soon decided in favor of the Reformation, and brought to the aid of Luther great attainments in learning, great acuteness in dialectics and exegesis, remarkable power both of clear thinking and of clearly expressing his thoughts, and, with all, a gentleness and moderation that most advantageously tempered Luther's vehemence. In 1521 he published his *Loci Communes Rerum Theologicarum*, the first great Prot. work on dogmatic theology. It passed through more than 50 editions during the author's life. In 1530 he made a most important contribution to the cause of Protestantism in the Augsburg Confession (q.v.). In 1541 he went to Worms, and soon afterward to Ratisbon, to conduct the cause of the Protestants in the conferences there. But the influence of the papal legate counteracted all his efforts for a peaceful accommodation, and his own party were much dissatisfied on account of the concessions which he made. After Luther's death, M. lost in some measure the confidence of some of the Protestants, by those concessions to the Rom. Catholics which his anxiety for peace led him to make; while the zealous Lutherans were no less displeased because of his approximation to the doctrine of Calvin on the Lord's Supper. M. was always greatly under Luther's influence, yet from time to time he developed modifications of Luther's doctrine; and indeed his own views, though always clearly evangelical, passed through varying philosophical phases. His consent, conditionally given, to the introduction of the Augsburg Interim (q.v.) in Saxony, 1549, led to painful disputes within the Prot. ranks; and he was involved in various controversies, which filled the latter years of his life with disquietude. He died at Wittenberg. M., though gentle, was emotional and excitable. He was conciliatory in the extreme. As a public teacher, he was exceedingly admired, and students flocked to him from all parts of Europe. He was essentially a theologian and scholar, and in his habits, if not in his opinions, was the precursor of those acute and laborious divines who have in modern times shed so much lustre on the German Church. The most complete ed. of his works (which comprise a Greek and Latin Grammar, editions of and commentaries on several

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classics and the Septuagint, biblical commentaries, doctrinal and ethical works, official documents, declarations, dissertations, responses, and a very extensive correspondence with friends and the leading men of the age) is that by Bretschneider in *Corpus Reformatorum* (28 vols. 1834-60). M.'s life has been written by his friend Camerarius (1566), and frequently since—e.g., by Matthes, Nitzsch, and Schmidt.

MELANCHTHONIAN, n. *měl-ängk-thō'nĭ-an*: a follower of Melanchthon, in his use of the Aristotelian philosophy.

MELANESIA, *měl-a-ně'shĭ.a*: division of the South Sea Islands inhabited by the Papuan race: see POLYNESIA.

MÉLANGE, n. *mā-längzh'* [F.]: a mixture; a medley.

MELANIN, n. *měl'ă-nĭn* [Gr. *melan*, black]: the black pigment found in the eye; also in the skin, especially of the negro.

MELANITE, n. *měl'ăn-ĭt* [Gr. *melan*, black]: a variety of garnet of a grayish-black color. MELANITIC, a. *měl'-ăn-ĭt'ik*, pertaining to melanite.

MELANO, or MELAN, prefix [Gr. *melanos*]: black.

MELANOCHROITE, n. *měl'ăn-ōk'rō-ĭt* [Gr. *melan*, black; *chrōā*, color]: a mineral, chromate of lead, occurring in rhombic prisms, and massive, of a deep hyacinth red.

MELANOCOMOUS, a. *měl-a-nōk'o-mūs* [Gr. *melanos*, black; *komē*, hair]: black-haired; having very dark or black hair.

MELANOPATHY, n. *-ōp'a-thĭ*: a disease of the skin, consisting in the augmentation of black pigment, generally in patches.

MELANORRHŒA, *měl-an-o-rĕ'a*: genus of trees of nat. order *Anacardiaceæ*.—To this genus belongs the BLACK VARNISH TREE (*M. usitata*) of Burmah and n.e. India, called *Theet-tsee* or *Zitsi* in Burmah, and *Khew* in Munipoor. It is a very large tree, attaining a height of 100 ft., with large, leathery, simple, entire, deciduous leaves, and axillary panicles of flowers. It yields a viscid rust-colored juice, which becomes black on exposure to the atmosphere, and is excessively acrid, causing swellings with much pain and fever if it touches the skin. It is valued as a varnish for painting boats, and vessels intended to contain liquids; also as a size-glue in gilding. Is a considerable article of trade in India and Burmah.

MELANOSIS, n. *měl'ăn-ō'sĭs* [Gr. *melas* or *melan*, black]: in *med.*, a disease characterized by a deposit of black or blackish-brown matter, occurring in various forms in different parts of the body. MELANOTIC, a. *-ōt'ik*, pertaining to or having the character of melanosis. For *Melanotic Cancer* or *Melanic Cancer* (Melanosis), see CANCER.

MELANOTYPE, n. *měl-lăn'o-tĭp* [prefix *melano*; Eng. *type*]: in *photog.*, a process which takes its name from the black ground of varnished sheet-iron supporting the collodion which receives the picture.

MELANOUS—MELAZZO.

MELANOUS, a. *měl'a-nūs* [Gr. *melan*, stem of *melas*, black]: word introduced by Dr. Pritchard as an equivalent for 'brunette.'

MELANTERITE, n. *měl-ăn'tér-īt* [Gr. *melan*, black]: the mineralogical term for the native sulphate of iron.

MELANTHACEÆ, *měl-ăn-thă'sē-ē*: natural order of endogenous plants; containing bulbous, tuberous, and fibrous-rooted plants, with or without stems, and having parallel-veined leaves which are sheathing at the base. The fruit is a capsule, generally divisible into three pieces.—There are about 130 known species, natives of all parts of the world, but most abundant in northern countries. Some resemble crocuses, and some are like small lilies. The order is characterized by great prevalence of poisonous qualities. Some of the species are used in medicine, particularly *Colechicum* (q.v.), White Hellebore (*Veratrum album*: see HELLEBORE), and SABADILLA (q.v.). The root of *Helonias dioica* is used in N. America as an anthelmintic and tonic bitter. The plant grows in wet places, and is called *Starwort* and *Blazing Star*, also *Unicorn's Horn* and *Devil's Bit*.

MÉLANURE, n. *mă'lăn-ūr* [F. *mélanure*—from Gr. *melan*, black; *oura*, a tail]: a small fish of the Mediterranean.

MELANURUS: see MÉLANURE.

MELA-ROSA, *měl'a-rō'za*: fruit of the genus *Citrus*, and probably a variety of the Lime (q.v.); cultivated in Italy. It receives its name from its fragrance being thought to resemble that of the rose. It is a small flattened fruit, with a protuberance at the tip, from which many raised ribs proceed in star-like form to the circumference. The skin is yellow, thin, and adheres closely to the pulp.

MELASMA, n. *měl-ăz'mă* [Gr. *melasma*, a black spot]: a blackening or darkening; in *med.*, a black spot on the lower extremities, especially of old people.

MELASSES: see MOLASSES.

MELASTOMACEÆ, *měl-ăs-to-mă'sē-ē*: natural order of exogenous plants, containing about 1,200 known species; trees, shrubs, and herbaceous plants, natives mostly of warm climates, though a few are found in temperate parts of N. America. They have opposite undivided leaves, destitute of dots. The flowers are regular.—None of the M. possess poisonous properties; some are used in dyeing; the gratefully acid leaves of some are cooked and eaten—particularly those of species of *Medinilla* and *Astronia papetaria* in the Malay Archipelago; some yield eatable and pleasant fruits, as *Blakea triplinervis* in Guiana, *Clidemia hirta* in the W. Indies, and *Memecylon edule* in Coromandel. The wood of some is tough and hard.

MELAZ'ZO: see MILAZZO.

MELBOURNE.

MELBOURNE, *Mēl'bern*: city, capital of the original state of Victoria, Australia; situated chiefly on the n. bank of the Yarra-Yarra, about nine m. by water and two m. by land above its mouth, in the spacious bay of Port Phillip; lat. $37^{\circ} 48'$ s., long. $144^{\circ} 58'$ e. Its streets are straight, regular, and wide; and are paved, macadamized, and plentifully supplied with gas and fresh water. Collins street, one of the leading thoroughfares, is one-third wider than Broadway, New York. M. is built of brick and stone, and contains many fine churches. Perhaps nothing gives stronger testimony to the wealth and enterprise of the inhabitants of M. than the rapidity with which so many noble institutions as adorn the city have sprung up. Among these, one of the chief is the university, with annual endowment from the state of £9,000, and possessing valuable scholarships and exhibitions. It is a large building, in the shape of a parallelogram, and is surrounded by extensive grounds. It was opened 1855, Apr., and has a considerable attendance of students in arts, law, engineering, etc. The post-office, a magnificent structure, in Italian style, elaborately ornamented with sculpture, was built 1859. The Yan-Yean water-works, by which water is conveyed by iron pipes from a distance of 18, m. were opened 1857. The Parliament Houses were erected 1855, at a cost of £400,000. The buildings for the Exhibition of 1880 cost above £70,000. Besides those mentioned, the chief institutions are the Melbourne Hospital, the Benevolent Asylum, the Immigrants' Home, the Servants' Home, the Orphan Asylums, the Lying-in Hospital, Treasury, County and City Courts, Public Library, Custom-house, Barracks, Picture Gallery, the numerous richly ornamented banks, the Grammar-school, Scotch College, besides many other educational establishments and numerous literary and scientific institutions and societies. There are three daily newspapers, two evening journals, and several weeklies and monthlies. M. is the centre of about a dozen converging lines of railway; several, however, being only suburban lines. There are several theatres and public parks. The temperature is moderate; the mean of the year being 50° , and the variation between the average temperature of January (mid-summer) and July (winter), 19° . The annual rainfall is about 32.33 inches. M. occupies the first rank among the ports of the British colonies, and is the most important trading town of the southern hemisphere. The chief exports are gold, silver, wool, hides, cattle, and sheep. Six-sevenths of the entire commerce of the colony is carried on by M. In 1891 the imports of M. were valued at £16,949,393, and exports were valued at £14,558,658. For further information regarding trade, etc., see VICTORIA. Vessels drawing 24 ft. can come up to the mouth of the Yarra-Yarra, but are unable to ascend the river, on account of two bars which obstruct its course. Improvements in recent years give clear passage to the city for vessels drawing 16 ft. M., however, is connected with Sandridge, on Port Phillip, by a railway two m. long.

MELBOURNE.

The chief industrial establishments of M. are flour-mills, tallow-boiling works, and brass and iron foundries. It is the see of an Episcopal bishop and a Rom. Cath. archbishop.

PORT PHILLIP, on which M. is situated, is a spacious and beautiful inlet of the South Pacific Ocean, on the s. coast of Australia, and is 35 m. long by about 25 m. broad. Its entrance, only two m. in width, is formed by two projecting promontories, called the Heads; and on these promontories strong fortifications were erected 1861. Navigation at the entrance of the port is difficult, on account of the foul ground on either side, and the violence of the ebb and flood tides, due to the unevenness of the bottom.

M. was colonized 1835, and received its name from Lord Melbourne, then the British prime minister, 1837. It became the seat of a bishop 1847, and in 1851 cap. of the newly formed colony of Victoria. For the discovery of gold in Victoria 1851, which gave such a surprising impetus to the material prosperity of M., see VICTORIA. Pop. (1881) city proper 65,860 with suburbs 282,836; (1891) 489,185; (1901) 496,079.

MELBOURNE, WILLIAM LAMB, Viscount: English Prime Minister: 1779, Mar. 15—1848, Nov. 24; b. London; second son of Sir Peniston Lamb, of Broom's Barn, Herts, who was raised to the peerage. His university education he received first at Trinity College, Cambridge; next at Glasgow, where he studied jurisprudence and politics. He entered the house of commons 1805, and joined the whig opposition, under the leadership of Charles James Fox. He accepted the chief secretaryship of Ireland in Canning's govt., and this partial alienation from the whigs was increased when he not only took office under Lord Goderich, but remained for a short time in the govt. of the Duke of Wellington. In 1828 the death of his father transferred him to the upper house. In 1830 he accepted the seals of the home office in the govt. of Earl Grey, but his administration was not popular or successful. 1834, July, Earl Grey retired, and William IV. sent for M. In Nov., the king chose to consider the removal of Lord Althorp to the upper house as the breaking up of the M. ministry, and sent for Sir Robert Peel, to form a conservative administration. But the house of commons resented the interference of the crown; and a new parliament having shattered the new govt., M. again became first lord of the treasury. On the accession of Queen Victoria, 1837, it became the duty of M. to advise the young sovereign in the various duties of her high station. In 1841 his govt. was succeeded by that of Sir Robert Peel and thereafter M. took little part in public affairs. He had little oratorical faculty, and was ineffective as a speaker, but his cordial frankness of manner made him many friends. He possessed classical tastes and rare social qualities. Sydney Smith, in his second letter to

MELCHISIDICIAN—MELEAGRINA.

Archdeacon Singleton, described his character with an exquisite mixture of sarcasm and compliment. He married (1805) a daughter of the Earl of Bessborough, who, under the title LADY CAROLINE LAMB (1785–1828), attained some celebrity as a novel-writer and a correspondent of Lord Byron.

MELCHISIDICIAN, n. *mĕl-kĭz-ĭ-dĭ'shan* [from *Melchizedek* (q.v.), Heb. *Malki-tsedheq*, King of righteousness]: in *chh. hist.*, one of a sect of heretics in the third c. who affirmed Melchizedec was the power of God, and superior to Christ; and that he sustained the office of an intercessor for angels in heaven, as Christ did for men on earth.

MELCHITES, *mĕl'kĭts*: Christians in Syria and other parts of the East, who, acknowledging the authority of the pope and the doctrines of the Church of Rome, adhere to the liturgy and ceremonies of the Eastern Church. They conduct divine service in the vernacular tongue, and receive the Lord's Supper in both kinds. Their priests may be married before ordination, but not their bishops. They are found chiefly in Aleppo and Damascus. Their patriarch resides at Damascus. The name M. (Royalists) dates from the 5th c., when they were supported by the emperors against the Monophysites (q.v.).

MELCHIZEDEK, *mĕl-kĭz'e-dĕk* (King of righteousness): 'King of Salem, and Priest of the Most High God' (Gen. xiv. 18–20), who met Abraham returning from his victory over the kings, and blessed him, and to whom Abraham gave tithes: see Heb. vii. 3. The majestic and mysterious figure of this royal priest, appearing without recorded genealogy, and whose priestly office, far antedating the Mosaic law, could be traced to no human ordination or succession, caused him to be set forth in Ps. cx. (comp. Matt. xxii. 42–46) and in Heb. vi. 20 and Heb. vii. as a prefigurement of the Messiah, the uncreated King and Priest. Some have sought to identify M. with Shem, sole survivor of the deluge; some have deemed him a manifestation of the Son of God in human form: such conjectures are interesting, but vain.

MELCH'THAL, ARNOLD VON: see SEMPACH.

MEL'COMBE RE'GIS AND WEY'MOUTH: see WEY-MOUTH.

MELDER, n. *mĕl'dĕr* [Icel. *meldr*, flour or corn in the mill; *malá*, to grind]: corn or grain of any kind sent to the mill to be ground; the quantity of corn or meal ground at one time.

MELEAGER, *me-le-ā'jĕr*: legendary Greek hero: see CALYDONIAN BOAR: ATALANTA.

MELEAGRINA: see PEARL OYSTER.

MELEAGRIS—MELFI.

MELEAGRIS, n. *mĕl-ĕ-ă'grĭs* [L., a guinea fowl—from Gr. *Meleagros*, the son of *Æneus*, and one of the combatants at the Calydonian boar-hunt. It is fabled that his sisters were changed into guinea-fowl, whence the scientific name of the genus]: a turkey; genus of gallinaceous birds of the family *Meleagridæ*, of which it is the type.

MÊLÉE, n. *mā'lā* [F. *mêlée*]: a crowding and confused fighting; a scuffle between a number of persons; a confused debate.

MELEGNANO, *mā-lĕn-yâ'nō*, or **MALEGNANO**, *mâ-lĕn-yâ'nō*, formerly **MARIGNANO**, *mâ-rĕn-yâ'nō*: town of n. Italy, 10 m. s.e. of Milan: pop. 5,500.—M. is famous as the scene of a great victory by Francis I. of France over the Swiss and Milanese 1515, Sep.: more than 20,000 men were slain. This conflict has been termed *the Battle of the Giants*. Francis accepted the honor of knighthood on the field from the Chevalier Bayard.—A second battle was fought here 1859, June 8, between a French force of 16,000 men, under Marshal Baraguay d'Hilliers, and a body of Austrian troops, in which the latter were routed with a loss of about 1,400 killed and wounded.

MELENA: see **MELÆNA**.

MELENDEZ VALDES, *mā-lĕn'dĕth vâl'dĕth*, **DON JUAN**: distinguished Spanish poet: 1754, Mar. 11—1817, May 24; b. at the village of Ribera del Fresno, in Estremadura. He studied at Madrid; and subsequently at Salamanca, where he became intimate with the poet Cadalso, and acquired a thorough knowledge of English. It was Locke, he said, who first taught him to reason, and his writings contain imitations of Pope, Thomson, and Young. In his earlier period, he wrote admirable Anacreontics in praise of student-life; his descriptive poetry also is excellent. His style and sentiment are simple and natural; and the national idioms are used with singular grace and vigor. The first collection of his verses appeared 1785, and soon became very popular. Four years before this publication, M. V. was appointed prof. at Salamanca, and high political honors seemed in store for him; but during the French invasion he allowed himself to be cajoled by Murat, and afterward by Joseph Bonaparte—a weakness as disastrous as it was discreditable. When the invaders were driven out of the peninsula, the unhappy poet was forced to accompany them. He died in poverty, a proscribed traitor, at Montpellier. M. V.'s Anacreontics are the writings on which his fame rests, and they have procured for him the title of *Restaurador del Parnaso*.

MELETIANS, *me-lĕ'shĭ-anz*: Christian sect in Egypt and Palestine, from the beginning of the 4th c. till the 5th c.; followers of Meletius or Melitius, bp. of Lycopolis, in Thebais (abt. 260—abt. 326). They called themselves the *Church of the Martyrs*, refusing to receive on repentance and penance many Christians who in the persecution under Diocletian had been led to renounce their faith. This refusal divided the M. from the church.

MELFI, *mĕl'fĕ*: ancient episcopal town of s. Italy,

province of Potenza, 32 m. s. of Foggia, on a feeder of the Ofanto (anc. *Aufidus*). It is on a bed of lava n.e. of the lofty (3,000 ft.) volcanic Monte Volture, now extinct, from which it is separated by a deep ravine. The magnificent cathedral, erected 1155, was almost entirely destroyed by an earthquake 1851, which at the same time levelled many fine buildings, public and private, and destroyed about 1,000 persons. The only evidences of volcanic action are the severity of the earthquakes which occasionally desolate the district, and the emission at times of carbonic acid and other gases from the lakes in the old crater of the volcano, throwing up columns of water, accompanied by internal rumblings. This phenomenon generally takes place when Vesuvius is in activity. The district around the city is celebrated for its wine. Pop. of M. 11,725.

MELIACEÆ, *měĩ-ā'sē-ē*: natural order of exogenous plants; containing nearly 200 known species, trees and shrubs, natives of warm climates, and mostly tropical. Many of the species possess bitter, astringent, and tonic properties; some are used in medicine; the seeds of some yield useful oil; some are poisonous; some yield pleasant fruits; the wood of some is valuable. See CARAPA.—The Lansoh is the most esteemed fruit of this order; and next to it is *Milnea edulis*, a fruit of n.e. India, of which the edible part is the large succulent aril.—The CAPE ASH (*Ekebergia Capensis*) is noticeable among the timber trees of this order: it has a trunk two ft. in diameter, and yields excellent tough timber, useful for many purposes.—*Melia Azedarach*, a tree about 40 ft. high, with large bipinnate leaves, native of Syria and other parts of the East, has long been planted as an ornamental tree in s. Europe, and is now common in the southern states of the American Union. Its flowers are in large spikes, and very fragrant. The fruit is of the size of a cherry, somewhat elongated, pale yellow, containing a brown nut. The nuts are bored and strung for beads in Rom. Cath. countries, whence the tree is often called BEAD TREE. It is known also as *Pride of India*, and is sometimes erroneously called *Persian Lilac*. The fruit is sweetish and not poisonous, though generally reputed so. The bark of the root, which is bitter and nauseous, is used as an anthelmintic. The pulp of the fruit of the NEEM TREE or MARGOSA TREE (*Azadirachta Indica*) yields a fixed oil, which is bitter, stimulant, and anthelmintic. The bark is a valuable tonic. The leaves are universally used in India for poultices.

MELIBŒAN, a. *měĩ-bě'ăn* [L. *Melibæus*, one of the two interlocutory speakers in Virgil's first Eclogue]: consisting of alternate stanzas or speeches; alternate, as stanzas or speeches.

MELICERIS, n. *měĩ-sē'rīs* [Gr. *melikēris*, a tumor on the head—from *meli*, honey; *keros*, wax]: in surg., a tumor inclosed in a cystis, and consisting of matter like honey. MELICEROUS, a. *měĩ-s'ēr-ūs*, pertaining to & tumor containing matter like honey.

MELIC-GRASS—MELIKOFF.

MELIC-GRASS, *mě'lik-* [L. *mel*; Gr. *meli*, honey], (*Melica*): delicate genus of grasses growing in the shade of woods, of order *Graminæ*; having a lax panicle, and spikelets of 2-5 awnless florets, of which one generally is imperfect. *M. uniflora* is of graceful and delicate appearance: cattle are fond of it. *M. nutans* is less common. *M. altissima*, a Siberian species, growing to the height of 3 or 4 ft., has been introduced in parts of Europe, and yields a considerable bulk of herbage: it is perennial.

MELICOCCA, *mě'í-kók'a*: genus of trees or shrubs of nat. order *Sapindaceæ*; one of which, *M. bijuga*, native of the W. Indies, is there universally cultivated for its fruit. It is called the HONEY BERRY and the *Jamaica Bullace Plum*; by the Spaniards, *Monos*; by the Dutch, *Knipnee*. It is 16 to 20 ft. high. The fruit is jet-black, about the size of a bullace. The seeds are roasted, and eaten like chestnuts. Other species of *M.* yield eatable fruits.

MELIKOFF, *mě'í-kof*, LORIS-, MICHAEL TARILOVICH, Count: 1826, Jan. 1—1888, Dec. 26: soldier; b. Transcaucasia. He was of Armenian origin, educated in Moscow, joined the hussars at St. Petersburg, served in the Crimean war as col., commanding a regt. of light cavalry, took part in the capture of Kars, and was given command of the place, with rank of gen. In the Caucasus campaign against Shamyl, conducted by Muravieff, M. served with distinction, and 1860 he was made gov.gen. at Vladikavkas, in Caucasia. In active service, as adjt.gen. under Grand Duke Michael, in the Turk-Russian war, he had chief direction of the operations of the army of the Caucasus, captured Ardahan 1877, May, and Kars in Nov., and at the end of the war was made count. His next service was in measures, 1879, for checking the plague on the Volga, where he was sent as gov.gen.; and when, in Apr. of the same year, the nihilist disturbances provoked the application of martial law at six principal centres of the empire, M. was intrusted with this duty at Kharkov. The nihilist attempt, 1880, Feb. 17, to destroy the czar, by exploding a mine under the dining-room of the winter palace, led to the naming of M., Feb. 24, as head of a supreme executive commission of safety, clothed with almost unlimited power. The day following the celebration (Mar. 2) of the 25th anniversary of the czar's accession, M. was shot at by an assassin, but not hit. The efforts of M. to check nihilism were accompanied by plans for liberal reform. The special commission was abolished 1880, Aug., and M. named minister of the interior. He, however, in Sep., warned the journals against discussing constitutional reforms, and when, early in 1881, he had begun to execute his scheme for giving limited rights to the people and removing social grievances, the success, Mar. 13, of a new plot to kill the czar, defeated his plans. The new czar was reluctant to even consider M.'s proposals, and issued May 11 a manifesto wholly contrary to them; and May 16 he accepted M.'s resignation.

MELILOT.

MELILOT, n. *mě'l'i-lôt* [L. and Gr. *melélōtos*, a species of clover—from Gr. *meli*, honey; *lōtos*, the lotus: F. *mélilot*], (*Melilotus*): genus of clover-like plants of nat order *Leguminosæ*, with ternate leaves, differing from the clovers in the generally elongated racemes of flowers, the stamens not adhering to the corolla, and the 1-4 seeded tumid pods. All the species have a strong peculiar sweetish smell, which becomes more agreeable when they are dried, and is due to the presence of Coumarine (q.v.).—The COMMON YELLOW M. (*M. officinalis*) is found in bushy places and the borders of fields in most parts of Europe. It has an erect stem, two or three ft. high, and long loose axillary racemes of yellow flowers. A water distilled from the flowers is used in perfumery. The herbage is relished by cattle, but the produce is not large. It is an annual, but if frequently mowed without being permitted to flower, lives for several years.—The WHITE M. (*M. vulgaris* or *leucantha*) is common in parts



Melilot.

of Europe. Both the yellow and the white abound as immigrants in the United States, and are known as SWEET CLOVER.—The BLUE M. (*M. cœrulea*), native of n. Africa, is cultivated in Europe. It was formerly much used in medicine as an anodyne, discutient, diuretic, sudorific, expectorant, and vulnerary; and to the many good qualities supposed to belong to it may be ascribed the high estimation in which the *Schabzieger* or *Chapzieger* cheese of Switzerland is held, to which it imparts its flavor. Where this cheese is made in considerable quantities, the smell of M. can be discerned even at a distance.—BOKHARA CLOVER (*M. arborea*) has attracted attention on account of the fibre of its stem, used for the same purposes as hemp.—The Messina M. (*M. Messinensis*), native of countries near the

MELIORATE—MELLIT.

Mediterranean, is believed to be one of the plants called *Lotus* by the ancients.

MELIORATE, v. *měl'yō-rāt* [mid. L. *melīōrātus*, improved—from *melīōr*, better: F. *améliorer*, to improve]: to improve; to make better. MEL'IORATING, imp. MEL'IORATED, pp. MEL'IORA'TION, n. *-rā'shūn*, improvement: in Scotch law, the improvements made by a tenant to the estate or farm which he occupies (see LANDLORD AND TENANT).

MELIPHAGOUS, a. *mě-līf'ă-gūs* [Gr. *meli*, honey; *phagein*, to eat or consume]: honey-sucking—applied to certain birds. MELIPHAGIDÆ: see HONEY-EATER.

MELIS'SIC ACID AND MELIS'SIN: see WAX.

MELIS'SUS, of Samos: see ELEATIC SCHOOL.

MEL'ITA: see MALTA.

MELITOSE, n. *měl'i-tōs* [Gr. *meli*, honey, *melitos*, of honey]: a kind of sugar obtained from the manna of various species of *Eucalyptus* of Australia and Tasmania. MELEZITOSE, n. *měl-ěz'i-tōs*, a kind of sugar found in the so-called manna, exuding from the young shoots of the larch.

MELL, v. *měl* [F. *mêler*, to mix]: in *OE.*, to mix; to mingle. MELL'ING, imp. MELLED, pp. *měld*. MELL-SUPPER, the harvest-supper—so named because servants and superiors sat mingled indiscriminately. PELL-MELL, confusedly; all in a heap.

MELL, n. *měl* [L. *mel*, honey, *mellis*, of honey]: in *OE.*, honey. MEL'LIC, a. *-īk*, of or belonging to honey; anything honey-like.

MELLATE, n. *měl'lāt*, or MELLITATE, n. *měl'li-tāt* [L. *mel*, honey, *mellis*, of honey; Gr. *meli*, honey]: a salt of mellic or mellitic acid. MELLIC, a. *měl'lik*, or MEL-LITIC, a. *měl-lit'ik*, containing saccharine matter; pertaining to or derived from honey-stone.

MELLIFEROUS, a. *měl-līf'ēr-ūs* [L. *mellifer*, honey-bearing—from *mel*, honey; *fero*, I carry or produce]: producing honey.

MELLIFICATION, n. *měl'li-fī-kā'shūn* [L. *mel*, honey; *fīciō*, I make]: the making or production of honey.

MELLIFLUOUS, a. *měl-līf'lū-ūs*, or MELLIF'LUENT, a. *-lū-ěnt* [mid. L. *melliflūūs*, flowing like honey—from L. *mel*, honey; *flūō*, I flow]: flowing as with honey; sweetly-flowing, generally applied to sound; soothing. MEL-LIF'LUOUSLY, ad. *-lī*, or MELLIF'LUENTLY, ad. *-lī*. MEL-LIF'LUENCE, n. *-ěns*, a flow of sweetness.

MELLIGENOUS, a. *měl-līj'ě-nūs* [L. *melligēnus*, produced from honey, honey-like—from Gr. *meli*, honey; *gēnōs*, stock, kind]: having the qualities of honey; producing honey.

MELLIT, n. *měl'lit* [L. *mel*, honey, *mellis*, of honey]: a dry scab on the fore foot of a horse, said to be cured by a mixture of honey and vinegar.

MELLITATE—MELODY.

MELLITATE: see MELLATE.

MELLITE, n. *mě'līt* [L. *mel*; Gr. *meli*, honey]: honey-stone, a peculiar substance found in beds of lignite. MELLITIC, a.: see under MELLATE.

MELLOW, a. *mě'lō* [Ger. *moll*, soft, ripe; *molich*, mellow: Dut. *molen*, to decay: OF. *molle*, mellow, overripe: W. *mallu*, to rot]: mature; soft with ripeness; pleasing by softness, as sound, light, or flavor; soft and jovial, as a person slightly intoxicated: V. to ripen; to soften, as by maturity or age; to grow or become mature or soft. MEL'LOWING, imp. MELLOWED, pp. *mě'lōd*, ripened; brought to maturity. MEL'LOWLY, ad. *-lī*. MELLOWNESS, n. *-nēs*, ripeness; softness; maturity. MEL'LOWY, a. *-ī*, soft.

MELO'DEON: see HARMONIUM.

MELODICON, n. *mě-lōd'ī-kon* [from *melody*]: an instrument made of steel bars in different lengths, tuned to the diatonic scale, struck with hammers held in the hand.

MELODRAMA, n. *mě'lō-drām'ă*, also spelled MEL'ODRAME, n. *-drām* [F. *mélodrame*—from Gr. *melos*, a song or tune; *drama*, a drama: It. *melodramma*]: *strictly*, a dramatic performance in which music is intermixed. The name was applied first to the *opera*, by its inventor, Ottavio Rinuccini. In Germany the term M. retains its original application; but in France, England, and the United States, it denotes a dramatic piece characterized by romantic and sensational incidents, and in the performance of which gorgeous scenery and decorations are accorded a prominent place. MEL'ODRAMAT'IC, a. *-drā-măt'ik*, having the character of a melodrama. MEL'ODRAM'ATIST, n. *-drām'ă-tist*, one skilled in melodrama.

MELODY. n. *mě'lō-dī* [F. *mélodie*—from Gr. *melōdiă*, musical measure, sweet singing—from *melos*, a tune, an air; *ōdē*, a poem or song: It. *melodia*]: sweetness of sound. The term in music is applied to an agreeable succession and modulation of a single series of sounds, expressive as a whole of some particular feeling. It is distinguished from Harmony, in which different notes, being chords, are sounded together. The part intended for the leading voice in a harmonized piece of music is often called the M. or *air*. The character of a M. depends in great degree on the rhythm and measure, as the same succession of sounds may, by the slightest change in the power of the notes, be so altered in character as to produce a different effect. MELODIOUS, a. *mě'lō-dī-ūs*, musical; agreeable to the ear by a sweet succession of sounds. MELO'DIOUSLY, ad. *-lī*. MELO'DIOUSNESS, n. *nēs*, the quality of being melodious. MELODIZE, v. *mě'lō-dīz*, to make melodious; to form into melody. MEL'ODIZING, imp. MEL'ODIZED, pp. *-dīzd*. MEL'ODIST, n. *-dīst*, a composer or singer of melodies. MEL-OD'ICS, n. *-ōd'iks*, branch of the science of music which treats of the laws of melody and the pitch of tones.—SYN. of 'melody': harmony; concord; unison; accordance.

MÉLOGRAPH—MELON.

MÉLOGRAPH, n. *mě'l'o-grăf* [Gr. *melos*, a song; *grapho*, I write]: an instrument designed to write down melodies as played upon a pianoforte.

MELON, n. *mě'l'ôn* [Gr. *mělôn*, an apple: F. and Sp. *melon*, a melon], (*Cucumis melo*): plant, also its fruit, of the same genus with the Cucumber (q.v.). The M. is much cultivated for its fruit, which is sweet, with a delicious though peculiar flavor and smell. The M. is an annual, with trailing or climbing stems, lateral tendrils, rounded angular leaves, small, yellow, monœcious flowers, and large round or somewhat ovate fruit. It is supposed to be a native of sub-tropical Asia, though it has never been discovered in a wild state, and it was introduced into England from Jamaica about 1570. It is said to



Common and Water Melon.

derive its name from the Grecian island Melos. Its English name was originally *Musk Melon*. The varieties in cultivation are very numerous, some of them distinguished by a thick and warty rind, some by a rind cracked in a net-like manner, some by ribs and furrows, some by a perfectly smooth and thin rind; they differ also in the color of the *flesh* of the fruit, which is green, red, yellow, etc.; and in the size of the fruit, which varies from three or four inches to 12 inches or more in diameter. The M. is eaten usually without condiments, sometimes with sugar, and sometimes with pepper or ginger. The M. is raised in immense quantities in the southern states, and in parts of the s. middle states. It thrives best in a loamy soil. The *setting* of the fruit, by dusting the female flower with the pollen of the male flower, is constantly practiced by gardeners. Warmth and bright sunshine are requisite to the production of fruit of good quality.—The WATER-M. or CITRUL (*Cucumis citrullus*) is highly esteemed and much cultivated in almost all warm countries. The markets of the United States are plenti-

MELOPIANO—MELÔS.

fully supplied with this favorite fruit, from the middle and especially the southern states. It is a native of the warm parts of the old world. It has deeply lobed and gashed leaves, and a large round or oval fruit with smooth dark-green spotted rind, and pink or white flesh, less sweet than the M., but much more juicy or watery, and therefore much prized in many warm countries, not merely for food, but for quenching thirst and allaying fever.—S. Africa has another species of WATER-M. (*C. Caffer*), very valuable to the inhabitants.—The CHATE (*C. Chate*) is a native of Egypt and Arabia. Its taste is sweet, and as cool as the water-melon.—The KAUKOOR (*C. utilissimus*) is a native of India; it has oval fruit about six inches long, smooth, variegated with different shades of yellow, with much the flavor of the melon: the fruit will keep for several months, and is used raw and in curries. The half-grown fruit is pickled. The seeds contain much farina and oil, and are ground into meal; the oil is expressed, and used for food and in lamps. The seeds of others of this genus may be used in the same way; and they are said to be useful as a diuretic medicine and for relief of strangury. MELON-FRAME, a glazed frame for raising melons.

MELOPIANO, n. *mĕl-ō-pĭ-ân'ō* [Gr. *melos*, a song; Eng. *piano*]: invention by which sustained sounds can be produced on a pianoforte. It was invented by Caldara of Turin, 1870.

MELORIA, *mā-lō'rĕ-â*: small island in the Mediterranean, about five m. in length and one in breadth, four m. from Leghorn. In the vicinity of M., 1284, the Genoese gained a famous naval victory over the Pisans, by which the Pisans were deprived of their maritime supremacy. An ancient Pisan tower stands on a rock s. of Meloria.

MELOS, *mĕ'los*, or MILO, *mĕ'lo*: island at the s.w. corner of the Grecian archipelago, in line with the extension into the Ægean Sea of Attica, about 60 m. distant. It is of volcanic origin, with a vast natural harbor penetrating from the n. nearly through the island, and evidently formed by the old volcanic crater. Volcanic action is still seen in the emission of smoke and sulphurous vapors from Mt. Kalamo, and in a remarkable cluster of hot sulphurous springs on the e. shore of the harbor. Sulphur and alum are found, and gypsum, salt, and millstones are exported. Cotton, barley, and vines are cultivated, and orange, olive, cypress, and arbutus trees grow abundantly. With Antimilos, 5 m. n.w., 4 sq. m. in extent, Cimolos, 1 m. n.e., 16 sq. m., and Polinos, also very near, 5½ sq. m., the whole territory of M. amounts to about 80 sq. m. Most of this is rugged and hilly, and Mt. Elias has a height of 2,538 ft. Cimolos was famous anciently for figs and fuller's earth, and still shows the remains of a considerable city. The ancient city of Melos, of Phœnician origin, but Hellenized by Dorians, was built terrace-fashion round a hill in the n.e. of the

MELPOMENE—MELROSE.

main island; and in size and beauty it was a notable Greek centre. Its painted vases, bronzes, gold ornaments, and other objects of art, attest the skill of its workmen. The finest known representation of Aphrodite, the 'Venus of Milo,' was found 1820, near the site of the ancient theatre of M. Athens subjugated M. B.C. 416, massacred or enslaved the people, and introduced Attic colonists. Dorian power was restored by Lysander about B.C. 404, but without a return of prosperity. A remarkable cluster of catacombs, with frescoes, etc., of Christian origin, are found at Tripiti, s.e. of the ancient city of M.—Pop. of M., with dependent islands, abt. 5,500.

MELPOMENE, n. *měl-pŏm'ě-nē* [Gr. *melpomēnē*, the songstress—from *melpōmai*, I sing praises]: one of the nine Muses, the Muse who presides over tragedy.

MELROSE, n. *měl'rōz* [L. *mel*, honey; *rosa*, a rose]: honey of roses.

MELROSE': city in Middlesex co., Mass., 8 m. n. w. of Boston, on the Boston and Maine r.r. It is a very attractive suburb of Boston, and has some thriving manufactures. It has water-supply from Spot pond. M. has a pub. pk. and library. Pop. (1890) 8,519; (1900) 12,962.

MELROSE, *měl'rōz* or *měl-rōz'*: pleasant village of Roxburghshire, Scotland; at foot of Eildon Hills, on s. bank of the Tweed, 37 m. by rail s.s.e. of Edinburgh. Pop. (1891) 1,432. It is famous for ruins of its noble Cistercian abbey, founded by King David I. 1136. The original pile having been destroyed during the wars of the succession, its rebuilding began about 1326. The work was helped by large grants from King Robert Bruce and his son King David II., but proceeded so slowly that it was scarcely finished at the Reformation, in the middle of the 16th c. Its progress had been hindered by a second destruction 1385, by Richard II. of England. It was in the Second Pointed style, with one or two approaches to Third Pointed, and was beyond doubt the most beautiful structure in Scotland in the middle ages. What now remains are the chief portions of the conventual church, 251 ft. in length, and some fragments of the cloister, which seems to have been a square 150 ft. deep. The tracery and carvings, in stone of singular excellence, are scarcely surpassed by any in England. In the pages of Walter Scott, M. shines with a splendor which its meagre history fails to sustain. Its line of abbots showed one saint, St. Waltheof, stepson of its royal founder. King Alexander II. chose his sepulture within its walls; Bruce left it the legacy of his heart; and it gave tombs to that flower of Scottish chivalry, the Knight of Liddesdale, and to his kinsman, the heroic Douglas, who fell at Otterburn. But its annals have little else to record. As a seat of piety and learning, its renown is eclipsed by the older and humbler columbite monastery founded by St. Aidan, about the middle of the 7th c., and commemorated by the Venerable Bede as the

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home of Eata, of Boisil, of Cuthbert, and of Dryethelm. 'Old Melrose,' as it was called after the 12th c., stood about two m. below the modern abbey, on a beautiful promontory almost encircled by the Tweed. It was burned by Kenneth, King of Scots, 839, and seems never to have recovered from the blow. After it had lain waste many years, we hear of it about 1073 as giving shelter, for a short season, to a few fugitive monks. All that survived the erection of the later abbey was a chapel dedicated to St. Cuthbert, and still famous about the middle of the 15th c. as a resort of pilgrims. The *Chronica de Mailros*, a series of brief obits and annals from 731 to 1275, has been twice printed—first among the *Quindecim Scriptores Historiæ Anglicanæ*, published by Bp. Fell, Oxford, 1684; again by Joseph Stevenson, for the Bannatyne Club, Edinburgh, 1835. The charters of the more modern abbey were printed by Cosmo Innes, Edinburgh, 1837, for the same soc., at cost of the Duke of Buccleuch, in two sumptuous quartos, with the title *Liber S. Marie de Melros*.

MELT, v. *mēlt* [Icel. *melta*, to digest: Dut. *smelten*, to melt: O. Slav. *mladu*, soft: AS. *molsnian*, to rot: Gr. *meldo*, I make liquid]: to make liquid by heat; to soften or subdue, as the heart or feelings; to liquefy; to thaw; to dissolve; to become liquid; to be dissolved; to be softened to love, pity, or tenderness; to be subdued by grief or affliction; to faint. MELT'ING, imp.: ADJ. dissolving; liquefying; softening into tenderness: N. the act of dissolving or melting; the act of softening. MELT'ED, pp.: ADJ. made liquid; dissolved: or MOLTEN, pp. *mōlt'n*: ADJ. made of melted metal. MELT'ER, n. -ēr, one who melts.—SYN. of 'melt': to fuse; soften; subdue; mollify; relax.

MELT, n. *mēlt*; in *Scot.*, another spelling of MILT, which see.

MELTON, n. *mēl'ton* [from Melton, England, where it is made]: kind of broadcloth for coating.

MELTON-MOWBRAY, *mēl'ton-mō'brā* or *mēl'ton-mō'brē*: market-town of England, county of Leicester, 16 m. n.e. of the town of Leicester, 104 m. by rail n. of London; on the Eye, near its junction with the Wreak, which is navigable to the Soar-Navigation, about 11 m. above the town. Stilton cheese is manufactured, and pork-pies are extensively made, chiefly for retail in the London, Manchester, and Leeds markets. In the vicinity are numerous hunting-seats, and the town, with stabling accommodation for 800 horses, is the central rendezvous of the famous Melton Hunt. There are breweries, tanneries, and 5 banks. Pop. (1871) 5,011; (1881) 5,766.

MELUN—MELVILLE.

MELUN, *mél'ling'*: ancient town of France, cap. of the dept. of Seine-et-Marne, built on an island and on both banks of the Seine, 28 m. s.e. of Paris. The manufactures are cement, bricks, tiles, and hats; and there is trade in timber, grain, and flour. M., the *Melodunum* of the Romans, was stormed five times during the 9th c. by the Northmen, and fell into the hands of the English after a siege of six months, 1419, and was held by them for ten years. Pop. (1881) 12,116; (1886) 12,527.

MELVILLE, *mél'vīl*, **ANDREW**: eminent Scottish reformer: 1545, Aug. 1—1622; b. Baldovy, on the banks of the South Esk, near Montrose. He was educated at the grammar school of Montrose, whence he removed in his 14th year to the Univ. of St. Andrews. Here he remained four years leaving with the reputation of being 'the best philosopher, poet, and Grecian of any young master in the land.' He then went to Paris, where he continued his studies for two years. His reputation must have been already considerable, for in his 21st year he was chosen regent in the College of St. Marceon, Poitiers, whither he had gone, a perfect stranger, to study law. Sometime afterward he went to Geneva, where he was more in his element, both politically and religiously, and where, by the influence of his friend Beza, he was appointed to the chair of Humanity in the Academy. During his stay in Geneva, multitudes of Prot. refugees came from France at the time of the massacre of St. Bartholomew; and the influence of some distinguished men among these is said to have deepened and broadened M.'s views concerning the liberty of the church. He returned to Scotland 1574, and was, in the same year, appointed principal of the Univ. of Glasgow, where his scholarship, energetic discipline, and intrepidity of character exercised a quickening and elevating influence. When the regent Morton exclaimed on one occasion: 'There will never be quietness in this country till half-a-dozen of you be hanged or banished,' M. is said to have replied: 'Tush, man; threaten your courtiers so. It is the same to me whether I rot in the air or in the ground; and I have lived out of your country as well as in it. Let God be praised, you can neither hang nor exile his truth!' In 1580 M. was chosen principal of St. Mary's College, St. Andrews. Here, 'besides giving lectures on theology, he taught the Hebrew, Chaldee, Syriac, and Rabbinical languages.' In 1582 he preached the opening sermon before the General Assembly, and boldly 'inveighed against the bloody knife of absolute authority, whereby men intended to pull the crown off Christ's head, and to wring the sceptre out of his hand.' M.'s career was one of indomitable courage in opposition to James VI., in his tyrannical attempt to invade the constitutionally guaranteed liberties of the church in Scotland and to establish Episcopacy. The Assembly applauded M.'s intrepidity, drew up a remonstrance in a

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similar spirit, and appointed M. and others to present it. In less than two years, M. was summoned before the privy council, on account of a sermon preached at St. Andrews. He declined to appear, maintaining that whatever a preacher might say in the pulpit, even if it should be called treason, he was not bound to answer for it in a civil court until he had been tried first in a church court. For this denial of secular jurisdiction he was condemned to imprisonment, but escaped to London, where he remained till the downfall of Arran in the following year. After an absence of 20 months, he returned to Scotland, and resumed his office at St. Andrews. He was repeatedly elected moderator of the General Assembly and rector of the University. A remarkable instance of his plain-speaking was at Cupar, 1596. M. was heading a deputation to 'remonstrate' with the king. James reminded the zealous remonstrant that he was *his* vassal. 'Sirrah!' retorted M., 'ye are *God's* silly vassal; there are two kings and two kingdoms in Scotland: there is King James, the head of this commonwealth; and there is Christ Jesus, the King of the church, whose subject James the Sixth is, and of whose kingdom he is not a king, nor a lord, nor a head, but a member.' M. died about 1622, but neither the date of his death nor the events of his last years are ascertained.

MELVILLE, GEORGE WALLACE: an American naval officer; b. in New York, 1841, Jan. 10; was educated at the Brooklyn Polytechnic Institute; served through the civil war as engineer; and later on various stations and at navy yards: accompanied the *Jeannette* polar expedition in 1878, the Hall relief expedition in the U. S. steamer *Tigress*; and the Greely relief expedition in 1884. In the *Jeannette* expedition he underwent the severest hardships and sufferings; commanded the boat's crew which escaped from the wastes of the Lena delta; and afterward headed the expeditions which recovered the records of the *Jeannette* expeditions and the remains of Lieut. DeLong and his companions. For bravery in the Arctic expeditions he was advanced 15 numbers by special act of Congress, 1890, Sept.; appointed engineer-in-chief of navy, 1896, Jan., and rear-admiral, 1899, Mar.

MELVILLE, HERMAN: author: b. New York, 1819, Aug. 1. At the age of 18, he shipped as common sailor on a voyage to Liverpool; and 1841 he went again before the mast on a whaling voyage to the Pacific. Ill-treated by the captain, he deserted at Nukaheva, Marquesas Islands, and was kept four months as prisoner of a savage tribe in the Typee valley, whence he was rescued by an Australian whaler, and taken to Tahiti. After visiting the Sandwich Islands, he shipped on a United States frigate, and returned to Boston 1843. In 1846 the first literary result of his adventures was published in *Typee*, a spirited account of his residence in the Marquesas. *Omoo*, a continuation of his adventures in Oceania,

appeared 1847, in which year he married a daughter of Chief-justice Shaw, of Mass. *Mardi*, a strange philosophical romance, 1848, was followed by *Redburn*, 1849; *White Jacket, or the World in a Man-of-War*, 1850; *Moby Dick, or the White Whale*, 1851; *Pierre, or the Ambiguities*, 1852; *Israel Potter*, 1855; *The Piazza Tales*, 1856; and *The Confidence Man*, 1857. In 1860 he embarked in a whaling vessel for a new tour round the world. *Battle Pieces* (1866) appeared after his return.

MELVILLE ISLAND: in the north polar sea of America; lat. $74^{\circ} 30'$ — 77° n.; long. $105^{\circ} 40'$ — $117^{\circ} 30'$ w.; greatest length, 200 m.; greatest breadth, 130, m. It is separated, on the w., by Fitzwilliam and Kellett Straits from Prince Patrick Island, most western island of these regions. In 1819 Lieut. Parry, who gave M. Island its name, passed the winter here with his crews, in the vain hope of finding in summer a passage westward to the Pacific.—**MELVILLE SOUND**, about 250 m. long by 200 m. broad, lies s.e. of M. Island: it communicates with the Arctic Ocean, on the w., by Banks's Strait, and with Baffin's Bay, on the e., by Barrow Strait and Lancaster Sound.

MELVILLE ISLAND: in the S. Pacific, w. of the extreme n. point of Australia, from which it is separated by Van Diemen's Gulf; lat. $11^{\circ} 8'$ — $11^{\circ} 56'$ s.; long. $130^{\circ} 20'$ — $131^{\circ} 34'$ e.; 70 m. long, 30 m. wide; abt. 1,800 sq. m. Dundas Strait leads past its e. end, and Clarence Strait past its s. point, from the gulf into the Indian Ocean. Bathurst Island on the w., would form part of M. but for the narrow Apsley Strait. The level rises 130 to 200 ft. in the centre, with a coast low on the n. and w., but high and bold elsewhere. In vegetation and animals it resembles Australia. The climate is made unhealthful by heat and humidity from Oct. to May, but from May to Oct. is salubrious.

MELVILLE PENINSULA: land abutting from the continent of British N. America; bounded n. by the Fury and Hecla Strait, and connected with the mainland by Rae Isthmus; lat. $66^{\circ} 10'$ — $69^{\circ} 50'$ n.; long. 81° — 87° w. It is 250 m. long, and about 1,000 m. in average breadth.

MELVILLE, VISCOUNT: see DUNDAS, HENRY.

MEMBER, n. *mēm'bēr* [F. *membre*; It. *membro*, a member—from L. *membrum*, a limb, a part of anything]: a limb or part of an animal, as a leg, an arm, an ear, etc.; a part of a discourse or of a period or sentence; one of a society or community; in *Scrip.*, one of the appetites or passions. **MEMBERED**, a. *mēm'bērd*, having limbs; in *her.*, applied to a bird having legs of different color from its body, when the bird is said to be *membered* of that color. **MEMBERSHIP**, n. state of being a member; society; union. **MEMBER OF PARLIAMENT**, usually contracted into M.P., one elected by a city, town, or county to represent it in that branch of the legislature called the Commons' House of Parliament.

MEMBRANE—MEMEL.

MEMBRANE, n. *měm'brān* [F. *membrane*—from L. *membrāna*, skin or membrane, a film : It. *membrana*] : a thin transparent layer or skin, serving to cover some part of an animal or of a plant. In *anatomy*, M. designates those textures of the animal body which are arranged in the form of laminae, and cover organs, or line the interior of cavities, or take part in the formation of the walls of canals or tubes. For the structure and special uses of some of the most important of the animal membranes, see the separate titles—e.g., **MUCOUS MEMBRANE**: **SEROUS MEMBRANE**: **SYNOVIAL MEMBRANE**: ETC.: for the membranes in which the foetus is inclosed—commonly called the foetal membranes—see **PLACENTA**. The membranes which cover and protect the brain and spinal cord are commonly termed *Meninges*, from the Greek word *meninx*, a membrane. **MEMBRANEOUS**, a. *měm-brā'nī-ūs*, or **MEMBRANOUS**, a. *měm'brā-nūs*, consisting of membranes. **MEM'BRANA'CEOUS**, a. *-nā'shūs*, resembling membrane; having the consistence, aspect, and structure of a membrane. **MEMBRANA PUPILLARIS**, very thin membrane which closes or covers the central aperture of the iris in the foetus during a certain period of gestation, but which disappears in the seventh month. **MEMBRANA TYMPANI**, n. *měm'brā-nā tīm'pā-nī* [L. *membrana*, a membrane; *tympanum*, a drum] : the membrane which separates the external from the internal ear—called the drum of the ear. **JACOB'S MEMBRANE**, the membrane covering the retina of the eye. **THE MUCOUS MEMBRANE**, the membrane which lines any natural open cavity of the body, and which secretes mucus (see **MEMBRANE**, above). **SEROUS MEMBRANE**, a membrane which lines any closed cavity of the body, and which secretes a lubricating fluid (see **MEMBRANE**, above).

MEMBRANIFEROUS, a. *měm'brā-nīf'ēr-ūs* [L. *membrāna*, a membrane or film; *fero*, I carry or produce] : producing membranes. **MEMBRANIFORM**, a. *měm-brā'nī-fawrm* [L. *forma*, a shape] : having the form of a membrane or of parchment. **MEMBRANOLOGY**, n. *měm'brā-nōl'ō-jī* [L. *logos*, a discourse] : a description of the animal membranes.

MEMEL, *mā'měl* : town of Prussia, the most northerly in Germany; chief town in the dist. of Königsberg; at the mouth of the Dange, and at the n. extremity of the Kurisches Haff, at its opening into the Baltic; lat. 55° 43' n.; long. 21° 6' e. It is a well-fortified, active seaport, with a large and excellent harbor, and is the centre of active trade in corn, wood, hemp, and amber; the produce of Lithuania and other Russian provinces being brought thither for exportation. The town is surrounded by an unproductive sandy plain. It has several manufactories of brandy, soap, linseed-oil, etc., and extensive saw-mills, iron foundries, and amber-works; also iron-works noted for their strong cables and their light and elegant cast-iron goods. Ship-building is carried on at

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M., which owns about 100 ships and has a good school of navigation; in one year, 1,200 to 1,500 vessels enter the port, and steam-packets maintain communication with many of the other Baltic ports. M. was founded 1253 by the Livonian order of knights; 1404 it was fortified by the Teutonic knights. In consequence of a fire 1854, it has of late years undergone an almost complete renovation, and is now clean and well built. Pop. (1880) 19,660; (1885) 18,748.

MEMENTO, n. *mě-měn'tō* [L. *memento*, remember or beware]: that which reminds; a hint or suggestion; a souvenir.

MEMLING, *měm'ling* (or HEMLING, *hěm'ling*), HANS: painter: 1425-95. Of the birth and early life of M., the little that is known shows him as a pupil of Roger van der Weyden; bred at Tournay, settled first at Brussels, and later so long at Bruges as to have been for ages credited to the school of art there. Probably M. was brought to Bruges by his master, and in the same way credited to that place alone, though its annals tell us nothing of his origin, education, and early work. The masterpiece of his later years, a shrine of St. Ursula, finished about 1480, is in the Hospital of St. John at Bruges, but the story of his coming there a soldier, half-dead with wounds, and painting for the brethren after they had cured him, is a myth. In 1473 a *Last Judgment* by him was sold at Bruges to an agent of the Medici, and a privateer of Danzig having captured the ship on which it was sent, the picture reached, and remained in, the cathedral of Danzig. This shows a fame already gained. A piece now at Munich, very little surpassed by his best work, is assigned to 1470. That the artist was very widely known is shown by the long list of his pictures in the galleries of Berlin, Vienna, Florence, Rome, Paris, Madrid, London, and in many private collections of England and continental Europe. In his style M. improved on the strong and severe qualities of his master, softening asperities and adding tenderness and grace, especially in the sweet and perfect ideal under which he represented the mother of Christ. These qualities of his work gave to his portraits a success attained by no other painter of his time.

MEM'LOOKS: see MAMALUKES.

MEMMINGEN, *měm'ming-én*: town of Bavaria, near the right bank of the Iller, 42 m. s.w. of Augsburg. It has handsome streets, carries on manufactures of woolen, cotton, and linen goods, gunpowder, and ironware; the chief part of the trade is in hops, wool, leather, and grain. Pop (1880) 8,406.

MEMNON.

MEMNON, *mēm'non*: mythologic hero, son of Tithonus and Eos or Aurora, who led to Troy a host of Ethiopians, to support the cause of Troy after the fall of Hector. He was said to be clad in armor made by Hephæstus or Vulcan; and to have killed Antilochus, son of Nestor, in single combat. M. was killed in single combat with Ajax or Achilles. Others suppose he was ruler of the nations between Susa and Troy, or a vassal of the Assyrian monarch Teutamus, who sent him with 10,000 Ethiopians, and as many Susians, to the Trojan war. After his death his corpse was carried by Aurora to Susa, and buried in the acropolis of that town, Memnoneia; or his ashes, collected in a silver urn, borne to his sister Himera at Paphos, and thence to Palliochis or Paltos, or to the banks of the Belos, near Ptolemais. The river Paphlagonios flowed from his blood, and his companions were changed into birds. But the M. of the older writers obtained still greater renown by the name being transferred at a later period by the Greeks to a celebrated colossus, seated in the plains of Thebes, on the left or w. bank of the Nile; while the name of Memnoneia was applied by the Egyptian Greeks to the sepulchral quarter of Thebes, as Diospolis was to the right or e. bank. Memnoneia, or supposed palaces of M., stood also at Abydos. The two statues—one of which is the celebrated vocal M., one of the wonders of the old world—are at a place called Koum-el-Sultan. Both are seated on thrones, and represent the monarch Amenophis III., of the 18th dynasty, whose name and titles are inscribed on the plinths behind. At the sides of the throne are sculptured the wife and mother of the monarch, about 18 ft. high. The height of each of these colossi appears to have originally been 60 ft., and they are made of a coarse hard gritstone or breccia. They are at present known by the sobriquets of Tammy and Shammy, and were originally placed before the propylon of an Amenopheion or palace-temple of Amenophis III. in this quarter, at Thebes. The easternmost of these colossi is the celebrated vocal statue, distinguished from its companion by having been anciently broken, and repaired from the lap upward with blocks of sandstone, placed horizontally, in five layers. The statue was either injured by Cambyzes, to whom the Egyptian priests ascribed most of the mutilations of the Theban temples, or else thrown down by an earthquake. The peculiar characteristic of this statue was its giving out at various times a sound resembling the breaking of a harp-string or a metallic ring; and there have been different opinions as to the cause of this sound, which has been heard in modern times—it being ascribed to the artifice of the priests, who struck the sonorous stone of which the statue is composed; the passage of light draughts of air through the cracks; or the sudden expansion of aqueous particles under the influence of the sun's rays. This remarkable quality of the statue is mentioned first by Strabo, who visited it in

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company of Ælius Gallus, about B.C. 18; and more than 100 inscriptions of Greek and Roman visitors incised upon its legs, record the visits of ancient travellers to witness the phenomenon, from the 9th year of Nero, A.D. 63, to the reign of Emperor Severus, when it became silent. Among other visitors whose names are recorded are those of Emperor Hadrian and his wife Sabina; Septimius Severus also visited the statue, and is conjectured to have restored it, for Juvenal mentions it as broken in half, and no notice of it occurs under the Pharaohs or Ptolemies. The identity of this statue and of M. is mentioned in the gloss upon Manetho, and by Pausanias and the inscriptions. Many considerations lead modern scholars to class the M. myth in close association with the worship of the sun.—Besides the mythical M., two historical personages of this name are known—one a Rhodian commander of the mercenaries of Artabazus in the war against Artaxerxes Ochus, who subsequently fled to Macedon, and afterward entering the Persian service, defended Persia against Alexander, B.C. 336; but finally died at the siege of Mitylene, B.C. 333: the other, a Greek historian, who wrote a history of Heraclea Pontica, in 16 books, epitomized by Photius.—Welcker, *Episch. Cycl.* 211; Strabo, xv. 728, xvii. 816; Ælian, *H. A.*, v. 1; Jacobs, *Die Græber des Memnon*; Eusebius, *Hieron*, p. 154; Juvenal, xv. 5; Letronne, *Sur le Mon. d'Osymandyas*; Wilkinson, *Top. of Thebes*, p. 33; Vossius, *De Hist. Græc. à Westermann*, p. 226; Diodor. xvi. 52.

MEMOIR, n. *měm'wawr* [F. *mémoire*, memory—from L. *memōriā*, memory—from *memor*, mindful]: a biographical history, generally written by one who had taken a part in the transactions recorded; a written account; a register of facts. MEM'OIRS, n. plu. *-wawrz*, notices and remarks respecting contemporary persons and events, written in a familiar style, just as they are remembered by the writer; a biography; the transactions and journals of a society. MEM'OIRIST, n. *-ist*, one who writes memoirs.

MEMORABLE, a. *měmō-ră-bl* [F. *mémorable*—from L. *memorābilis*, remarkable—from *memor*, mindful]: worthy of being remembered;—illustrious; remarkable. MEM'ORABLY, ad. *-blī*. MEM'ORABIL'ITY, n. *-bīl'ī-tī*, state of being memorable. MEMORABILIA, n. plu. *měm'ō-ră-bīl'ī-ă* [L.]: things memorable; things remarkable and worthy of remembrance.—SYN. of 'memorable': signal; famous; distinguished; celebrated; extraordinary.

MEMORANDUM, n. *měm'ō-răn'dŭm*, MEM'ORAN'DA, *-dă*, or MEM'ORAN'DUMS, *-dŭmz*, n. plu. [L. *memoran'dum*, worthy of remembrance—from *memor*, mindful]: a note or notes to help the memory.

MEMORIA—MEMORY.

MEMORIA, n. *mě-mō'ři-a* [L.]: memory. MEMO'RIA TECH'NICA, n. *-těk'ně-ka*, technical memory; a method for assisting the memory: see MEMORY.

MEMORIAL, n. *mě-mō'ři-āl* [OF. *mémorial*—from L. *memoriālis*, of or belonging to memory—from *memor*, mindful]: anything that serves to preserve the memory of; a monumental record; a written address of solicitation or complaint; a state paper or note in which there is neither subscription nor address—much used in negotiations. MEMO'RIALIZE, v. *-ři-āl-īz*, to petition by memorial; to present a memorial to. MEMO'RIALIZING, imp. MEMO'RIALIZED, pp. *-īzd*. MEMO'RIALIST, n. *-īst*, one who presents a memorial.—SYN. of 'memorial': monument; memorandum; record; remembrance; petition; memento; remembrancer.

MEM'ORY: one name for the great and distinctive fact of mind, the power of retaining impressions made through the senses, and of reviving them at after-times without the originals, and by mental forces alone. For the conditions of this power, see ASSOCIATION OF IDEAS: HABIT. Some of the arts and devices propounded for aiding recollection, in the various kinds of knowledge, are here adverted to.

Perhaps the commonest remark on this subject is, that M. depends on Attention, or that the more we attend to a thing, the better we remember it. This is true with reference to any special acquisition: if we direct the forces of the mind upon one point, we shall necessarily give that point the benefit of the concentration; but this does not affect M., as a whole: we merely take power from one thing to give it to another. M. at large can be improved only by increasing the vigor and freshness of the nervous system, and by avoiding all occasions of exhaustion, undue excitement, and other causes of nervous waste. We may do this by general constitutional means, or by stimulating the brain at the expense of the other functions; this last method is, however, no economy in the end. Every man's system has a certain fund of plastic power, which may be husbanded, but cannot be materially increased on the whole; the power being greatest in early life, and diminishing with advancing years. If it is strongly drawn upon for one class of acquisitions, we must not expect it to be of equal avail for others.

But there may be ways and means of presenting and arranging the matters of our knowledge so as to retain them at smaller cost of the plastic power of the brain. These include the arts of teaching, expounding, and educating in general, also certain more special devices commonly known as the arts of Memory, or Mnemonics.

The oldest method of artificial M. is said to have been invented by the Greek poet Simonides, B.C. 5th c. It is named the *topical*, or locality memory, from the employment of known places as the medium of recollection. As given by Quintilian, it is in substance as follows: You choose a very spacious and diversely arranged place—a

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large house, for instance, divided into several apartments. You impress on the mind with care whatever is remarkable in it, so that the mind may run through all the parts without hesitation. Then, if you have to remember a series of ideas, you place the first in the hall, the second in the parlor, and so on with the rest, going over the windows, the chambers, to the statues and several objects. Then, when you wish to recall the succession, you commence going over the house in the order fixed, and in connection with each apartment you will find the idea that you attached to it. The principle of the method is, that it is more easy for the mind to associate a thought with a well-known place than to associate the same thought with the next thought, without any medium whatever. Orators are said to have used the method for remembering their speeches. The method has been extensively taught by writers on mnemonics in modern times. Probably, for temporary efforts of M., it may be of some use; the doubtful point always is, whether the machinery of such systems is not more cumbrous than helpful.

Much labor has been spent on mnemonic devices for assisting in the recollection of numbers, one of the hardest efforts of memory. The principal method for this purpose is to reduce the numbers to words, by assigning a letter for each of the ten numerals, 0-9. This method was reduced to system by Gregor von Feinaigle, German monk, and was taught by him in various parts of Europe and finally published 1812. He made a careful choice of the letters for representing the several figures, having in view some association between the connected couple, for more easy recollection. For the figure 1, he used the letter *t*, as being a single stroke; for 2, *n*, as being two strokes combined; 3, *m*, three strokes; 4, *r*, which is found in the word denoting 'four' in the European languages; 5, *l*, from the Roman numeral L, signifying fifty, or five tens; 6, *d*, because the written *d* resembles 6 reversed; 7, *k*, because *k* resembles two 7's joined at top; in place of this figure is also used on occasion *g*, *q*, *c* (hard), as all belonging to the guttural class of *k*; 8, *b*, from a certain amount of similarity, also *w*, for the same reason, and sometimes *v*, or the half *w*; 9 is *p*, from similarity, and also *f*, both of which are united in the word *puff*, which proceeds from a *pipe*, like a 9 figure; 0 is *s*, *x*, or *z*, because it resembles in its roundness a grindstone, which gives out a hissing noise like these letters. The letters of the alphabet not employed in representing figures are to be used in combination with these, but with the understanding that they have no meaning of themselves. Suppose, then, that a number is given, say 547: 5 is *l*, 4 is *r*, 7 is *k*; which makes *l r k*; among these letters we insert an unmeaning vowel, as *a*, to make up an intelligible word, *LaRK*, which remains in the memory far more easily than the numerical form. In making up the words by the insertion of the unmeaning or *dumb* letters, we should also have regard to some connection

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with the subject that the number refers to, as, for example, in chronology. Thus, America was discovered in 1492; the letters here are *t, r, p, n*; they may be made into *TO RAPINE*, because that discovery led to rapine by the first Spaniards. There is, of course, great room for ingenuity in the formation of these suggestive words. Also, a series of numbers may be joined together in some intelligible sentence which can be easily remembered. Such combinations, however, should be formed once for all in the case of any important series of numbers, as the dates of successive sovereigns and other historical epochs. It is too much to expect pupils to construct these felicitous combinations. Feinaigle combined the topical method with the above plan in fixing a succession of numbers in the memory. Dr. Fauvel Gouraud taught mnemonics on this system somewhat modified: he had classes in some large cities of the United States about 1840.

Dr. Edward Pick, a recent lecturer on mnemonics, has called attention to a peculiar mode of arranging lists of words that are to be fixed in the memory, as the exceptions to grammar rules, etc. He proposes to choose out such words as have some kind of connection with one another, and to arrange them in a series, so that each shall have a meaning in common with the next, or be contrasted with it, or be related to it by any other line of association. Thus, he takes the French irregular verbs, which are usually arranged in the alphabetical order (which is itself, however, a mnemonic help), and puts them into the following series, where a certain connection of meaning exists between every two: as *sew, sit down, move, go, go away, send, follow, run, shun*, etc. In a case where two words have no mutual suggestiveness, he proposes to find out some intermediate idea that would bring about a connection. Thus, if the words were: garden, hair, watchman, philosophy, he would interpolate other words; thus—*garden, plant, hair of a plant—hair; hair, bonnet, watchman; watchman, wake, study—philosophy*; and so on. Of course, the previous method is the one that should be aimed at, as the new words are to a certain extent a burden to the mind. Dr. Pick further suggests as a practical hint, in committing to memory, that the attention should be concentrated successively upon each two consecutive members of the series; the mind should pause upon the first and the second, until they have been made coherent; then abandoning the first, it should in the same way attend to the second and the third, the third and the fourth, etc. Of course, if every successive link is in that way made sufficiently strong, the whole chain is secure.

There are various examples of effective mnemonic combinations. The whole doctrine of the syllogism (q.v.) is contained in five lines of Latin verse; as regards amount of meaning in small compass, these lines have never been surpassed, if, indeed, they have been equalled. The versification of the rules of the Latin grammar has the same end in view, but all that is gained by this is

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merely the help from the association of the sounds of the verse in the ear; in comparison with a topical memory, this might be called a rhythmical memory. The well-known rule for the number of days in the different months of the year ('Thirty days hath September,' etc.) is an instance of mnemonic verse.

MEM'ORY, DISEASES OF: impairment of the power of reproducing mental impressions, caused by age, wounds, or injuries to the head or nervous system, fevers, intemperance, and various physical conditions. Memory is perhaps affected in all kinds of mental derangement, but is in a signal manner obliterated or enfeebled in *Dementia*. There are, however, examples of recollection surviving all other faculties, and preserving a clear and extensive notion of long and complicated series of events amid the general darkness and ruin of mind. Incoherence owes some of its features to defective or irregular memory. Cases of so marvellous an exaltation and extension of this capacity, as where a whole parliamentary debate could be recalled, suggest the suspicion of unhealthful action. There appear, however, to be special affections of the faculty. It may be suspended while the intelligence remains intact. Periods of personal or general history may elude the grasp, and even that continuity of impressions which goes far to constitute the feeling of personal identity is broken up, and a duality or multiplicity of experiences may appear to be conjoined. The converse of this may happen, and knowledge that had completely faded away may, under excitement or cerebral disease, return. There are, besides, states in which the power of memory is partially affected, as in the instances where the numbers 5 and 7 were lost, and where a highly educated man could not retain any conception of the letter F; secondly, where it appears perverted, recalling images inappropriately, and in an erroneous sequence of order or time, and different from what are desired; thirdly, where, while the written or printed signs of ideas can be used, the oral or articulate signs are utterly forgotten. All these deviations from health appear to depend upon changes, generally of an apoplectic nature, in the anterior lobes of the brain.—Crichton on *Mental Derangement*; Teuchtersleben, *Medical Psychology*; Ribot, *Les Maladies de la Mémoire* (1881).

MEMPHIAN, a. mēm'fī-ăn: pertaining to *Memphis*, an ancient Egyptian city; dark; obscure.

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MEMPHIS, *mēm'fīs*: city, cap. of Shelby co., Tenn.; in the s.w. corner of the state; lat. $35^{\circ} 8' \text{ n.}$, long. $90^{\circ} 5' \text{ w.}$; port of delivery on the Mississippi r., just below the mouth of Wolf r., on the fourth Chickasaw bluff; 420 m. below St. Louis, 780 m. above New Orleans, 232 m. by r.r. from Nashville. It has nine lines of r.w. communication, six entering the city directly, one conveying its trains by transfer boat from the Arkansas side of the Mississippi, and two reached by ordinary ferry. The largest sea-going vessels ascend the river to its wharves, and lines of steamers run to New Orleans, St. Louis, Cincinnati, Vicksburg, Napoleon, Ark., and to the Arkansas, White, and St. Francis rivers. It was long the largest city of Tenn., until the growth of manufacturing and mining interests at Nashville, with its more healthful situation, its higher educational development, and its advantages as the cap. of the state, gave that city precedence in pop., manufactures, banking capital, mining interests, and general trade. On the Miss. r., M. is the principal business centre between St. Louis and New Orleans. As a cotton market it is second only to New Orleans, its trade in that staple having risen to more than fourfold its amount (112,296 bales) 1865-66. In 1900 M. had 8 cotton ginning establishments, which employed \$36,600 capital, used material valued at \$11,312, and had products valued at \$36,937. A very large business is done by the oil mills for pressing the cotton seed, and in cotton manufacture. There are several large foundries, machine shops, saw and planing mills, extensive wood-working establishments, carriage, furniture, and other factories, tobacco factory, and flouring mills. The wholesale trade in groceries, meat in bulk, dry-goods, boots and shoes, drugs and chemicals, and other articles called for throughout the southwest, is very large, and growing rapidly. There were 1902, Sept., 4 national banks (cap. \$1,250,000), and 9 state and savings banks (cap. \$2,360,000), and 8 fire insurance companies. It has 59 churches, of which 31 are for colored people; 17 public and 19 private schools; a Rom. Cath. coll., a city female coll., and the state female coll., a public library, daily and weekly newspapers, and two monthly publications, a city hospital and several orphan asylums. The U. S. courts for the w. dist. of Tenn. are held at M., and there is a custom-house on the esplanade between the Mississippi r. and Front st., beautifully built of the best marble from quarries in the state. It has a chamber of commerce and a cotton exchange.

The bluff on which M. stands is about 80 ft. above the lowest mark of the river, and about half that above extreme high-water mark. The bayou Gayoso, with several branches, intersects it, and until 1880 received most of its drainage. Since 1880 over 40 m. of sewers, and a still greater length of subsoil drain-tiles, have been laid on the Waring system, securing superior drainage. The water supply is from Wolf r., on the Holly system; gas and electric lighting are supplied; the streets are broad

and regular; avenues leading out from the river have many elegant residences with beautiful lawns; in the centre of the three sq. m. over which M. is built is a fine park, with a statue of Andrew Jackson; there are 20 m. of street r.w.; and six cemeteries, of which the chief is Elmwood on the s.e. border of the city.—M. was laid out as a village 1820, and became a city 1831. In the civil war M. fell into the possession of the Union forces after a naval fight 1862, June 6. Gen. Forrest captured, but did not hold it, 1864, Aug. The natural course of its prosperity after the war suffered a severe check from the ravages of yellow fever in 1873, 78, and 79, due to its terribly unsanitary condition, with a system of noisome vaults, of wells and underground cisterns in which the water was contaminated, of pavements of wood rotting away, and of the foul arms of the Gayoso bayou. The fever caused over 2,000 deaths (1873), 5,150 (1878), and 497 (1879), when fully two-thirds of the pop. had fled, many of whom died elsewhere. The calamity of 1878, with city debt estimated to exceed a third of the taxable property, so prostrated the finances and business of M., that a remedy was sought in the abolition, 1879, Jan., of the old charter, and a new organization, specially planned to remove abuses, cure evils, and meet the demands of public health and prosperity. These plans were slowly but most successfully carried out, giving to M. sanitary security, financial soundness, and a new lease of business prosperity. In 1900 M. had 659 manufacturing, employing \$11,189,249 capital and 8,433 hands; paying \$3,641,435 for wages, and \$9,656,969 for materials; and yielding products valued at \$17,923,059. In 1902 the assessed valuation of all taxable property was \$40,827,654, bonded debt 1903, Jan. 1, was \$2,980,000; sinking fund, \$147,673; and net debt, \$2,832,327. Pop. (1860) 22,623; (1870) 40,226; (1880) 33,592; (1882, Oct.) 47,976 within the city limits (29,130 white, 18,846 colored); (1885) about 45,000; (1890) 64,495; (1900) 102,320.

MEMPHIS: celebrated Egyptian city, in the Delta, or Lower Egypt; cap. of the ancient Egyptian empire. It was called by the Egyptians *Men nefer*, 'the Good Station;' by the Hebrews, *Moph*; by the Arabs, *Memf*. M. is mentioned in the Old Testament, as Moph (Hos. ix. 6); and as Noph (Is. xix. 13; Jer. ii. 16; Ezek. xxx. 13, 16). It was founded by Menes (q.v.), first monarch of the first dynasty, who, according to Herodotus, changed the bed of the Nile, and made an embankment, 100 stadia (a stadium = 606 ft. 9 inches) above M., to protect the new city against inundations. The remains of this bank are still seen at Kafr-el Tyat, about 14 m. above Metrahenny, which is the centre of old M., and the site of the temple of Ptah or Hephæsteum. Menes fortified the city, and laid the foundations of the temple. Uchoreus, a later monarch, also is said, according to some traditions, to have founded M., and introduced the worship of Apis and Epaphus. The site of the city was well chosen, protected alike by the Libyan and Arabian chains of

mountains against the river and the incursions of the sand, defending the approach of the country from the incursions of Asiatic nomads, and communicating with the Red Sea and the Mediterranean. The city was composed of two portions—one built of crude bricks; the other, on which was the citadel, of calcareous stone, called the *Leukon Teichos*, or 'White Wall,' which held some of the principal buildings. The palace, built by Menes, was enlarged by his son Athothis, and was always inhabited either by a monarch or his viceroy. Under the Persian rule, it was occupied by the satrap; and by the Greek mercenaries, under the Saite kings. Under Uchoreus, the total circumference was 150 stadia. After the 6th dynasty, the city declined in importance, and was apparently held by the Hykshos after the 13th and before the 18th dynasty (B.C. 1500). At this period, M. was ruled by a viceroy, a prince of the blood, and still remained the religious capital of the old worship. It rose again to great importance under the Saite monarchs, about B.C. 600, who restored it; it became the seat of a separate monarchy, and was conquered by Sen-nacherib and his successors. The temples were magnificent, and comprised the Iseum, a large temple of Isis, completed by Amasis II. just prior to Cambyes, B.C. 525; a temple dedicated to Proteus, in the foreign quarter; the temple of the Apis, having a peristyle and court ornamented with figures, opposite the south propylæum of the temple of Ptah, where the sacred bull resided; the Serapeum, or temple of Os or Apis, in the quarter recently discovered by Mariette (see SERAPEUM); the Nilometer, removed by Constantine I. to Constantinople, replaced by Julian III. or the Apostate; a temple of Ra; and the shrine of the Cabiri. Here were the statues of Rameses II., one of which remains as the fallen colossus, Metrahenny; and others have been discovered by Hekokyan Bey in his excavations. These colossi, more than 75 ft. high, were of Syenitic granite, or of the limestone of Tourah or Mokattam. These temples flourished in all their glory till the Persian conquest. Still more remarkable was the great necropolis of the city, in the centre of which towered the pyramids (see PYRAMIDS). During the attempts of the native rulers to throw off the Persian rule, M. was an important strategic point. Ochus inflicted severe injury on this town, having plundered the temples and thrown down the walls after he had driven out Nectanebus. Alexander the Great here worshipped the Apis, and his corpse was brought to this city by Ptolemy before it was finally transferred to Alexandria. The first Ptolemies were crowned in the Serapeum. Ptolemy VIII. destroyed the city, and it had so declined after his time as to become a ruinous site. It fell with the rest of Egypt under the Roman rule, and afterward was conquered by Amru Ben Abas A.D. 639-640; and Fostat and Cairo were built out of its ruins, which were large and important in the 13th c., when they were seen by Abd-alatif. The few remains

of the ancient city are Koum-el-Azyzeh to the n.; Met-rahenny on the w.; and the canal of Bedrachin on the s.; but the remains here are submerged many feet in the soil of the Delta.

Herod. ii. 97, 101, 147, 178; Diod. xviii. 34, i. 46, Fragm. t. 33, lvi. p. 184; Thucyd. i. 104; Hygin. xiv. 90; Heliod. ii. 59, 61; Hosea ix. 6; Isaiah xix. 30; Ezek. xxx. 13, 16; Wilkinson, *Top. Thebes*; Bunsen, *Egypt's Place*; Champollion-Figeac, *L'Egypte*; and the works on Egypt of Lepsius, Brugsch-Bey, Ebers, Rawlinson, Maspero, and others.

MEMPHREMAGOG, *mēm-fré-mā'gög*, LAKE: body of water partly in Canada, partly in Orleans co., Vt.; length n. to s. abt. 30 m., width 2 to 5 m. Through Magog river its waters flow into the St. Francis, which empties into the St. Lawrence. It has good fishing facilities and is surrounded by picturesque scenery, and at its s. end at Newport, Vt., there are large hotel accommodations for summer visitors: from this point steamers run to the village of Magog, Can., at the n. outlet. M. has water-connections northward with extensive lumber regions.

MEN: plu. of MAN, which see.

MEN, THE: in n. Scotland, where Gaelic is still spoken, a remarkable class of irregular yet recognized religious exhorters, forming practically an order correspondent to Meth. local preachers. The M. pass gradually into the order, according to reputation for piety and gifts in prayer and exhortation. There are often three or four in a parish; and on Friday preceding a communion, the M. attired in long blue cloaks, gather from adjoining parishes—sometimes numbering a score or more,—and exercise their gifts. In the deficiency of regular ministers for scattered villagers, the M. have done good service and have had great influence among the people. The rise of the Free Church increasing the ministerial supply in the Highlands, has largely diminished both the need and the influence of this order.

MENACCANITE, n. *měn-āk'kăn-īt* [from *Menaccan*, Cornwall, where first observed]: a titaniferous iron ore, occurring massive and in grains, of a light iron-black color.

MENACE, n. *měn'ās* [F. *menace*; It. *minaccia*, a threat—from L. *mināciā*, threats]: a threat; a threatening: V. to threaten, in any sense; to inspire with apprehension. MEN'ACING, imp. *-ā-sīng*: ADJ. threatening: N. a threat. MEN'ACED, pp. *-āst*. MEN'ACINGLY, ad. *-lī*. MEN'ACER, n. *-ā-sér*, one who threatens.

MENADO, *mě-nâ'dō*: important possession of the Netherlands, on the n. of the island of Celebes (q.v.): it is under the government of the Moluccas. The country is volcanic, with many lofty mountains. The mountainous grounds of the province of Minahassa are well adapted for the growth of coffee, which was first planted 1820, and speedily became favorably known in the market. The coffee-culture is compulsory, and the government monopolizes the product at a fixed price. In 1870-80, there were about 11,000,000 coffee-trees, producing more than 1,000 tons per annum. The rice crop averages 47,880 tons. There are 400,000 sago and 800,000 cocoa-nut trees, and cacao, tobacco, cotton, and cinchona are cultivated. In 1875, there were 11,626 horses, 19,867 cattle, 201,284 swine, 8,641 buffaloes, and 17,169 sheep and goats. In this residency, civilization and Christianity have made rapid progress. Twenty years ago, the pagans were most numerous in the Minahassa district, but 77,184 are now Christians.—The town of Menado is neatly built, has a church, a school for the children of Europeans, and others for those of natives.—Pop. whole territory (1900) officially estimated 293,947.

MÉNAGE: see MANÈGE.

MENAGE, *mā-nâzh'*, GILES DE, or ÆGIDIUS: French lexicographer and linguist: 1613, Aug. 15—1692, July 23; b. Angers. Disliking the profession of an advocate, he renounced it, with an office under govt., which his father had transferred to him, entered the priesthood, and fixed his residence in the convent of Notre Dame, applying himself chiefly to literary pursuits, in which he acquired great reputation. He was an extreme pedant, full of prejudices and bitter hostilities. His *Dictionnaire Etymologique de la Langue Française* (Par. 1650; best ed. by Jault, 2 vols. Par. 1750), and *Origini della Lingua Italiana*, are erudite and valuable works, though they give many erroneous etymologies.

MENAGERIE, n. *měn-âzh'ér-î* or *měn-ăj'ér-î* [F. *ménagerie*, a place for keeping foreign animals—from *ménage*, a house, a family]: a collection of foreign and wild beasts; the place where they are kept; also spelled MENAG'ERY, n. -*ěr-î*.

MENAI STRAIT, *měn'î*: separating the island of Anglesey from the mainland of Wales, runs e.n.e. from its s. extremity to Bangor, 13 m., and there widens into Beaumaris Bay. Its width varies from about 250 yards to 2 m. The navigation is hazardous, but the strait is nevertheless much used for the sake of expedition by vessels under 100 tons, and occasionally by some of larger size. At the entrance of the strait, the tides sometimes rise 30 ft., and the ordinary neap-tide rises 10 to 12 ft. Communication between Anglesey and the mainland was formerly maintained by ferry-boats at different points; but a suspension bridge was constructed by government in the line of the great Holyhead road, and subsequently railway communication was estab-

lished by means of the Britannia Bridge (q.v.). The scenery on both sides of the strait is mildly beautiful.

MENANDER, *mē-năn'dēr*: the most famous Greek poet of the New Comedy (see **DRAMA**, Comedy): B.C. 342-291; b. Athens. His uncle was the comic poet Alexis; he had Theophrastus for his teacher, and Epicurus for a friend; and the influence of all three is discernible in his style of thought and feeling. M. was a handsome, light-hearted, and elegant Greek, somewhat luxurious, but not impure in his manners. It is said that he was drowned while swimming in the harbor of the Piræus. M. wrote more than 100 comedies, which were in high repute among his countrymen, at least after his death; but we possess mere fragments of them. He was greatly admired in Rome also. We know something of their character, however, from the imitations of them by Terence. Pleasant and refined wit, clear, sententious reflection, and a vein of real earnestness at times, are the qualities most apparent in them. Of one of his plays only five verses are preserved, of which one is quoted by the Apostle Paul, I Cor. xv. 33. The best edition of the extant fragments of M. is Meineke's *Fragmenta Comicorum Græcorum* (Berl. 1841).

MENANDRIAN, n. *mē-năn'drī-an*: in *chh. hist.*, follower of Menander, disciple of Simon Magus, who to all his master's heresies, added this of his own: that without baptism in his name salvation was all impossible, and to all so baptized he promised immortality and incorruptibility.

MEN'CHIKOFF, or **MEN'CHIKOW**: see **MENSHIKOFF**.

MEN'CIUS: see **MENG-TSE**.

MEND, v. *mënd* [L. *emendārē*, to correct—from *menda*, a blemish: It. *rimendare*; Milanese, *menda*, to mend clothes]: to repair, as a defect or injury; to set right; to rectify or correct; to improve or make better; to hasten, as the pace; to grow better. **MEND'ING**, imp.: **ADJ.** repairing; improving: **N.** the act of repairing. **MEND'ED**, pp. **MEND'ER**, n. *-ēr*, one who mends.—**SYN.** of 'mend': to improve; better; emend; help; correct; amend; reform; rectify.

MENDACIOUS, a. *měn-dā'shūs* [L. *mendācīum*, a falsehood—from *mendax*, lying: It. *mendacio*, falsehood]: false; lying. **MENDA'CIOUSLY**, ad. *-lī*. **MENDAC'ITY**, n. *-dās'ī-tī*, deceit; falsehood; lying.

MENDÆ'ANS, or **MANDÆ'ANS**: name for **CHRISTIANS** of **ST. JOHN** (q.v.).

MENDA'ÑA ISLANDS: see **MARQUESAS**.

MENDE, *möngd*: town of France, cap. of the dept. of Lozère, on the Lot, in a valley surrounded by high hills, about 70 m. n.n.w. of Montpellier. In the vicinity, are numerous villas and gardens. M. has a cathedral surmounted by two spires, and manufactures serges and other coarse cloths. Pop. 7,000.

MENDELSSOHN, *mën'déls-sôn*, MOSES: eminent German philosopher: 1729, Sep. 6—1786, Jan. 4; b. Dessau on the Elbe. From his father, a Jewish schoolmaster and scribe, he received his first education; and in his 13th year went to Berlin, where, though very indigent, he contrived to learn Latin and modern languages, and to apply himself to philosophy, into which early readings, chiefly of Maimonides's *Moreh Nebuchim*, had initiated him. After many years of comparative indigence, he became partner of a rich silk-manufacturer, whose children he had educated. M. was the intimate friend of Lessing, and an associate with men like Sulzer and Nicolai; and he directly and indirectly contributed in a vast degree to remove the brutal and vulgar prejudices against the Jews, and the disgraceful laws concerning them. On the other hand, he acted in the most beneficial manner on his own co-religionists, by rousing them from the mental apathy with which they regarded in his day all that had not a distinct reference to religion, and by strongly combating their own religious and other prejudices. On account of his immense influence upon them, he was called another Moses. His principal works are—*Pope, ein Metaphysiker* (with Lessing) (Dan. 1755); *Briefe über die Empfindungen* (Berl. 1764); *Ueber die Evidenz der metaphysischen Wissenschaften*, a prize essay of the Berlin Acad., which thereupon unanimously resolved to elect him a member of their body; Frederick the Great, however, generally prejudiced against the Jews, struck his name off the list; *Phædon, oder über Unsterblichkeit der Seele* (Berl. 1767), dialogue in the manner of Plato; *Jerusalem, oder über religiöse Macht des Judenthums* (Berl. 1783), chiefly in answer to Lavater's obtrusive, sometimes even offensively worded arguments, by which he intended to convert M. to Christianity, or to prove that he was a Christian already. Further, *Morgenstunden* (Berl. 1785): Morning Conversations with his children and friends, chiefly in refutation of Pantheism and Spinozism. Besides many other smaller Hebrew and German essays, contributions to the *Bibliothek der schönen Wissenschaften*, edited by Lessing (to whom, in a manner, he furnished the prototype to his *Nathan der Weise*), etc., his translation of the Pentateuch and the Psalms has prominent place. His works were edited 1845, and again in 1880 (8 vols.).

MENDELSSOHN-BARTHOLDY, *mën'déls-sôn-bâr-tol'-dē*, FELIX (JAKOB LUDWIG FELIX): German musical composer: 1809, Feb. 3—1847, Nov. 4; b. Hamburg; son of Abraham M.-B., eminent banker, and grandson of Moses Mendelssohn, philosopher. His father was a convert to Christianity, and young Felix was brought up in the Lutheran faith. The affluent circumstances of his parents enabled them to give him a most liberal and careful education. His fine genius early showed itself. Zelter was his instructor in composition, Ludwig Berger on the piano. In his ninth year, he gave his first public concert in Berlin, and in the following year played in Paris. From this period, he commenced to write com-

positions of all sorts, some of them very difficult, for the piano, violin, violoncello, etc. In 1824 the first of these—three quartets for the piano—were published. In 1825 he went a second time to Paris—his father, on the advice of Cherubini and other eminent artists, having consented that he should devote himself exclusively to music. He then gave concerts both in Paris and Berlin, after which he travelled for three years in England, Scotland, France, and Italy. In England he obtained enthusiastic applause by his overture to Shakespeare's *Midsummer Night's Dream*, which, in its blending of the fanciful, the delicate, and the grotesque, is said to have caught the inspiration of Shakespeare himself. It reveals originality, freshness, technical mastery, and is usually assigned the highest rank among modern musical compositions. He afterward wrote music to accompany the whole play. His *Isles of Fingal* are a fine memorial of the impression left on him by the wild scenery of the Western Highlands. His letters from Italy also show how profoundly he was affected by that land—the ancient home of art. M. subsequently attempted to start a musical theatre for the cultivation of high art, at Düsseldorf; but it did not succeed. In 1835 he accepted the directorship of the Leipzig concerts. Here he was in the centre of the musical world of Germany, and was stimulated to his highest and most brilliant efforts; yet it was in England that M. first met a reception proportionate to his genius. His oratorio *St. Paul*, after being performed at Dresden and Leipzig, was produced under his own management at the Birmingham festival, 1837, Sep. 20, and created quite a furor. It and his other oratorio *Elijah*, on which he labored nine years, and which was brought out first at the Birmingham festival of 1846, are reckoned his two greatest works. His ten visits to England exerted an educational influence on musicians in that country. He died at Leipzig. Among his best-known compositions are his music for Goethe's *Walpurgisnacht*, the *Antigone* and *Œdipus* of Sophocles, *Athalie*, and a great number of splendid sonatas, concertos, trios. In his *Lieder ohne Worte* (Songs without Words), he achieved a great and novel triumph. M.'s character, which was even finer than his genius, is charmingly delineated in his *Letters*, translated by Lady Wallace (1862). In society he was brilliant and charming; he was amiable, generous, sympathetic, and in his friendships unswervingly true. His marriage 1837 was in every respect happy. See Hensel's *The Mendelssohn Family* (transl. 1881).

MENDICANT, n. mēn'dī-kānt [F. *mendiant*, a beggar—from L. *mendicans* or *mendican'tem*, begging—from *mēdicus*, needy: It. *mendicante*]: specifically, one of a religious fraternity in the R. Cath. Chh. who originally lived by begging; a friar: in general, beggar: see BEGGAR: VAGRANTS: POOR, THE: ADJ. begging; practicing beggary—applied to several religious fraternities in the R. Cath. Chh. (see MENDICANT ORDERS). MEN'DICANCY, n. -kān-sī, a state of begging; beggary. MENDICITY, a.

MENDICANT ORDERS—MENDOZA.

mĕn-dīs'ī-tī [F. *mendicité*—from L. *mendicitātem*, extreme poverty]: pertaining to beggars; for assisting beggars, as *mendicity* society: N. the life of a beggar; the state of begging.

MENDICANT ORDERS: religious associations in the Roman Church, which, carrying out the principle of religious poverty and self-humiliation to its fullest extent, make it a part of their profession to denude themselves of all property, whether real or personal, and to subsist on alms. As the scriptural foundation of this practice, the words of our Lord (Matt. xix. 21) to the rich young ruler who sought counsel of him, and again (verses 27-30) to his own disciples, are commonly alleged, both by the M. O., and in general by all who profess what is called evangelical poverty. In the M. O., alms are commonly collected by the lay-brothers: in some, by actual solicitation; in others, by the ringing of the convent bell when the stock of provisions is exhausted. Formerly, such orders were numerous in the church; but by a decree of the second Council of Lyon 1274, the M. O. were limited to four—Dominicans, Franciscans, Carmelites, and Augustinians or Austin Friars. (See these titles: also **FRIARS**.) The rule by which individuals are denied the possession of even personal property is understood strictly in Rom. Cath. countries. In England and Ireland, it was considerably relaxed, but of late years has been enforced with increasing exactness.

MENDIP HILLS, *mĕn'dīp*: range in the n. part of Somersetshire, England, extending n.w. and s.e.; about 25 m. long, by 3 to 6 m. in breadth. In former times, the moors of Mendip were attached to the crown as a royal forest, and were frequently hunted over by the Saxon and Norman kings. A considerable portion of the range is now under cultivation. The summit is Black Down, 1,100 ft. The lead and calamine mines of Mendip (called *grooves*, the miners being called *groovers*) were in operation before the dawn of history.

MENDOTA, *mĕn-dō'ta*: thriving city and railroad junction, forming the business centre of Mendota township, La Salle co., Ill.; on a rolling prairie 84 m. w.s.w. from Chicago. It has ten churches, several excellent schools, a Lutheran college, two newspapers, three banks (one national), and a public library. The leading manufacturing interests are an organ factory, iron foundry, flouring mills, and carriage shops. Pop. (1880) 4,142; (1890) 3,542; (1900) 3,736.

MENDOZA, *mĕn-dō'za*, Sp. *mĕn-dō'thâ*: capital of the dept. of M. in the Argentine Republic (q.v.); on the e. base of the Andes, 110 m. e.n.e. of Santiago, 2,891 ft. above sea-level. It was a well-built town, but was totally destroyed by an earthquake 1861, when its buildings were demolished, and abt. 12,000 of its 15,000 inhabitants perished; but it has been rebuilt on a new site, and is rapidly growing. Pop. (1901) 29,500.

MENDOZA.

MENDOZA, *měn-dō'za*, Sp. *měn-dō'thâ*, ANTONIO DE, Viceroy of Mexico: 1495-1552, July 21; b. Granada, Spain. 1535, Apr. 17, he was appointed viceroy of Mexico by Charles V., and was the first and most famous of the series of 64 such officers. He effected many beneficent reforms, especially mitigating the condition of the Indians. In 1536 he imported into the city of Mexico the first printing-press brought to America; established a mint for coining money; 1537, founded the first college in the country; promoted agriculture, and developed the mineral resources of the land. He repressed an Indian revolt without unnecessary severity; and, 1551, was made viceroy of Peru, where he died at Lima.

MENDOZA, Don DIEGO HURTADO DE: Spanish classic author, distinguished also as statesman and general: abt. 1503-1575, Apr.; b. Granada. After studying there and at the Univ. of Salamanca, he was sent by Emperor Charles V. as ambassador to Venice. Later, he was present at the Council of Trent as imperial plenipotentiary, and 1547 was appointed ambassador to the papal court. As a general, he was successful in subjugating Siena, which was transferred to Cosmo I. Medici, as a fief of the Spanish crown. His position, however, was a difficult one; he was hated both by pope and people, and 1554, the emperor recalled him. During his residence in Italy, he showed great zeal in collecting literary treasures, especially ancient mss. He sent learned men for that purpose to Mount Athos, and also took advantage of the regard entertained for him by Soliman the Magnificent, Sultan of Turkey. In 1568 an affair of gallantry terminated in his banishment from court. He withdrew to Granada, where he spent his last years in writing his *Guerra contra los Moriscos* [History of the War against the Moors—first published (with parts omitted) 1610, and complete 1776, by Portalegre, who prefixed a life of the author]. This work is regarded by M.'s countrymen as a masterpiece. His library is now one of the ornaments of the Escorial. In his poetical epistles, he gave his country the first good model for that form of composition. His sonnets and serious poems are inferior.

MENDOZA, IÑIGO LOPEZ DE, Marquis of Santillana: 1398-1458, March 26; b. Spain; son of the grand admiral of Castile, who died while M. was a child; whereupon the ruling nobles of the kingdom seized his vast family estates. M., however, recovered them either by law or in combat before he had attained his majority. He commanded an army successfully against the Moors; defeated the Aragonese at Araviana and in the defense of Alcalá; and was made marquis after the battle of Olmedo. He turned from the internecine struggles and political plots of the court and kingdom, after the fall of Alvarado de Luna, and occupied himself in literature. Inheriting poetic tastes from his grandfather, Pero Gonzalez M., he wrote much, but was notable rather as pa-

MENDS—MENENDEZ DE AVILES.

tron and protector of other poets. He was an imitator of Dante, and of Italian and Provençal poetry in general; and introduced into Spain the sonnet and allegory in poetical composition. His best-known poetical works are the *Comedieta de Ponza*; and popular proverbs, or *Refranes*, in 100 rhymed sentences. Much of his poetry remains unpublished. He died at Guadalajara.

MENDS, n.: in *OE.*, for AMENDS, which see.

MENELAUS, *mĕn-ĕ-lā'ūs*: in ancient Greek legend, king of Lacedæmon. He was younger brother of Agamemnon, and husband of the famous Helen. The abduction of his wife by Paris is represented as the cause of the Trojan war. After the fall of Troy, he sailed with Helen for his own land; but his fleet was scattered by a storm, and he wandered for eight years about the coasts of Cyprus, Phœnicia, Ethiopia, Egypt, and Libya. After his return, he lived at Sparta with his wife Helen in great happiness; and the legend proceeds to the effect that, as son-in-law of Zeus, he did not die, but was translated to Elysium.

MENENDEZ DE AVILES, *mā-nĕn'dĕlh dā ā-rĕ'lĕs*, PEDRO: 1519–1574, Sep. 17; b. Aviles, Spain. For many years he had cruised as a privateer with great success against the French corsairs, when Philip II. made him his councilor and capt.gen. of his India fleets. He convoyed Philip to England to marry Queen Mary; was very successful against the pirates; and brought to Philip the reinforcements that won the battle of St. Quentin. 1565, June 29, he went from Cadiz with 34 vessels to found a colony in Florida, of which he had been made *adelantado*. Near the mouth of the St. John's river he found the French Huguenot colony under Ribault; captured their fort Caroline, and treacherously massacred nearly the entire body of French settlers after their surrender to him on his promise to spare them. This he justified on the ground, not of their being Frenchmen, but heretics; and he affixed inscriptions to this effect to their bodies hanged on trees. On this expedition St. Augustine was discovered and named; posts established at Cape Canaveral, and at Port Royal, S. C.; and the coast explored as far n. as Chesapeake Bay. Then M. returned to Spain to make his report. During his absence the French adventurer Dominique de Gourgues captured San Mateo, as Ft. Caroline had been named, and cruelly avenged the massacre of the French colony—hanging the Spaniards on the same trees which had borne the bodies of their victims. In 1570 M. sent a vessel with a colony of Jesuits to the Rappahannock; but they all were massacred by the Indians. M. at once, 1572, came over and avenged the destruction of his colony, and explored the Potomac. He was recalled, however, soon after, while engaged in strengthening and enlarging his colony, to take command of a fleet against the Netherlands; but while fitting out this fleet, he died at Santander.

MENES, *mē'nēz*: first king of the first Egyptian dynasty. He built Memphis, made foreign conquests, introduced luxury, and is said to have been devoured by a hippopotamus. During his reign, there was a revolt of the Libyans. His name marks a great chronological epoch, being placed by chronologists B.C. 3643, 3892, or even 5702. Stricter chronologists make his accession B.C. 2717. This name, M., which signifies 'the conductor,' has been found on inscriptions, but no contemporary monuments of him are known.—Bunsen, *Egypt's Place*, ii., 579; Lepsius, *Königbuch, quellentaf.*, 5; Böckh, *Manetho*, 386; R. S. Poole, *Hor. Egypt*, 219.

MENEVER: see **MINEVER**.

MENEVIAN, a. *měn-ē'vī-an* [from *Menevia*, the Roman name of St. David's: it is a corruption of Henemenew, the old British name]: of or belonging to St. David's.

MENFI, *měn'jē*, or **MENFRICI**, *měn-frē'chē*: town of Sicily, province of Girgenti, 43 m. s.s.w. of Palermo, crowning a long bare height, about three m. from the coast. Pop. 9,900.

MENGs, *měnks*, **ANTON RAFAEL**: German artist and writer on art: 1728, Mar. 12—1779, June 29; b. Aussig, Bohemia; son and pupil of Israel M., a mediocre painter. From the age of 13 to 16 he studied in Rome, giving his time wholly to the works of Michael Angelo, Raphael, and other old masters. On his return to Dresden 1744, he was appointed court-painter to Augustus III., king of Poland and Saxony, but with permission to go back to Rome. Here he gained praise by a picture of the 'Holy Family.' The young peasant-girl who sat for the Virgin so charmed the painter by her beauty, that he entered the Rom. Cath. Church, and married her. In 1754 he accepted the presidency of the newly instituted Academy of Painting (the Vatican school) at Rome. Within the next few years, he executed the frescoes in the church of San Eusebio, and those of *Apollo and the Muses on Parnassus* for Cardinal Albani. In 1761 he went to Madrid, on invitation from Charles III. of Spain, and executed a great variety of works, the best known of which is his *Aurora*. Returning to Italy, he was employed by Clement XIV. on a large allegorical subject for the Vatican Library, representing Janus dictating to History. After three years, he again visited Spain, and there produced his best-known work, *Apotheosis of the Emperor Trajan*, executed on the dome of the grand saloon in the royal palace at Madrid. On his way back to Italy, he stopped at Monaco, where he painted his picture of the *Nativity*, reckoned by many his finest piece. He d. in Rome. M.'s works are careful and elaborate imitations of the great masters. He had great gift at borrowing the technical qualities of a painter; but the living soul of genius, the quickening and creative power of imagination, was not his. M.'s writings were edited in Italian by Azara 1780: they are learned expositions of his 'eclectic theory' in art, which pro-

poses to reach perfection by a close imitation of diverse excellencies of various artists. There is an English translation (Lond. 1796).

MENG-TSE, *měng-tséh'* (i.e., the teacher Meng; earlier, MENG-KO; Latinized by the Jesuits into MENCIVS, which is the form most known): B.C. 385 or 372—B.C. 289; b. in the village of Tséou, in the present dist. of Shantung: Chinese sage, greatest of the early Confucians. His repute in China is next to that of Confucius, whom M. acknowledged as his great master. His father died while M. was very young; but he was educated with such admirable care by his mother, that the phrase 'mother of Meng' has become a proverbial term for an excellent preceptress. At that period, China was divided into a number of states, all acknowledging the suzerainty of the emperor of Tseu. M. travelled to several courts, seeking through more than 20 years to introduce his doctrines of 'virtue' and 'justice;' but unfortunately, he found that princes and great men did not admire these things so much as poor scholars did. His conversations with rulers and state-functionaries, with his disciples and acquaintances, were written down by his admirers. They form the *Hsi-tsi*, otherwise called the Book of Meng-tse—the fourth of the Four Books: see CONFUCIVS. Many of the thoughts are exquisitely true, suggestive, and subtle. Several translations of it have been published, but they fall far short of the energy, sententiousness, freshness, and vivacity of the original. There is a Latin one by S. Julien (1824), an English one by Collie (1828), and a French one by Pauthier (1851). See Faber's *Mind of Mencius* (transl. 1881), and the works of Legge and Douglas.

MENHADEN, *měn-hā'děn* (*Alosa menhaden*): fish of the same genus with the Shad (q.v.), which is caught in great quantities on the coasts of New England and New York during summer, when it visits them for the purpose of spawning. Its length is 8 to 14 inches; the color of the upper parts is greenish brown, the belly silvery, a black spot on the shoulder, the whole surface iridescent. The M., though eatable, is not very palatable, but is rich in oil, which is used by painters, and is considered superior to linseed oil. Vast quantities of this fish are taken in some seasons, and are sold for manure, one fish being considered equal to a shovelful of barn-yard manure, and 2,500 sufficient for an acre of land. Steam-vessels are largely used for this capture.

MENHIR, n. *měn'ér* [W. *maen*, a stone; *hir*, high]: a tall rude or sculptured stone of unknown antiquity, placed upright in the ground, and standing singly or in groups.

MENIAL, a. *mě'nĩ-äl* [OF. *maisnee* and *meisnee*, the dependants on the head of the family, the household servants—from mid. L. *maisnada* and *mainada*, for *mansōnāta*, a family, a household (see MEINY): comp. Gael. *muinn*, a house]: *strictly*, belonging to the office of a ser-

MENIER—MENINGES.

vant; pertaining to the rougher parts of household work; low; servile; humble: **N.** a servant who does the rougher parts of household work; a domestic of the very humblest rank; any servile, cringing person. **ME'NIALY**, ad. -*āl-lī*.

MENIER, *mē-ne-ā'*, **EMILE-JUSTIN**: 1826–1881; b. Paris. He studied chemistry; established laboratories at St. Denis, which he threw open for the free use of students and scientists. In 1859 he established an annual prize for researches into the properties of drugs; 1864, he founded a school of practical chemistry, and gave 10,000 francs for establishing a series of lectures on this subject. He built free model schools, at his own cost, at Noisiel; and divided 10,000 francs among the school-teachers of the different departments of France reporting the largest attendance of pupils. He was head of the most important drug house in the country; retiring from which he made a fortune by the manufacture of chocolate, and founded a thriving colony of comfortable cottages for the operatives in his factories, at Noisiel, with schools, baths, hospital, etc. He became one of the richest men in France, and in his splendid residence in Paris gathered a rare collection of art objects and antiquities. He owned 6,000 acres, beside a tract 25 m. sq., in Nicaragua, where were his cocoa-tree plantations that supplied his factories at Noisiel. In 1862 he was on an international jury at the London exposition; and 1867, at the Paris exposition, was commissioner for Nicaragua and Costa Rica. He was in several battles during the Franco-Prussian war, having organized an ambulance corps, with which he personally cared for the wounded. In 1870 he was elected a member of the conseil-général of Seine-et-Marne; and later of the chamber of deputies. He bought (1879) the chateau of Noisiel for \$2,000,000. **M.** was chosen a member of the Cobden Club in Great Britain; and did much to establish closer commercial relations between France and the United States, being a chief promoter of the Franco-American treaty of commerce, for which he was laboring at the time of his death.

MENILITE, n. *mēn'īl-īt* [after *Menil-montant*, near Paris]: a brown and opaque variety of opal; liver-opal.

MENIN, *mēh-nāng'*: frontier town of W. Flanders, Belgium, on the left bank of the Lys, which separates it from France, 30 m. s.s.w. of Bruges. It was formerly fortified, but its works have been demolished, and it is now a dismal and lifeless town, with some manufactures. Pop. about 12,000.

MENINGES, n. plu. *mē-nīn'jēz* [Gr. *meninx*, a membrane, *mening'gos*, of a membrane]: membranes which envelop the brain—called the *pia-mater* and *dura-mater*. **MENINGITIS**, n. *mēn'īng-jī'tīs*, inflammation of the membranes covering the brain. **MENINGEAL**, a. *mē-nīn'-jē-al*, pertaining to the meninges.

MENINGITIS—MENISPERMACEÆ.

MENINGITIS [see **MENIN'GES**]: inflammation of the membranes investing the brain, especially of the arachnoid and pia-mater (the middle and innermost membranes).

This disease has been divided into three stages—the symptoms of the first being those of excitement, resulting from inflammation; those of the second being those of compression, showing that an effusion of fluid into the arachnoid cavity has taken place; while those of the third stage vary according as convalescence or death is the result. Various classifications have been proposed. The following is favorably regarded: Cerebral M., Tubercular M., Spinal M., Cerebro-spinal M.; also Pachymeningitis (infrequent), or the inflammation of the dura-mater. Cerebral and cerebro-spinal M. shade into each other, and are not in all cases easily distinguishable.

M. is apt to occur especially in children of a tuberculous diathesis, in which case the disease is usually described as acute Hydrocephalus (q.v.). Scarletina, measles, and other diseases caused by a blood-poison, may induce it in children. In adult life, the disease may often be traced to the action of typhus and marsh poisons, to intemperance, sunstroke, mechanical injuries, etc.

When the disease is due to any of the above-named blood-poisons, or to any constitutional cause, little can be done effectually in the way of special treatment. When it arises from mechanical injuries, bleeding, calomel, active purgatives, and cold applications to the head are often of use. The patient should be kept on low diet, and all mental excitement should be most carefully avoided.—See **EPIDEMIC CEREBRAL MENINGITIS**.

MENIPPUS, *mē-nīp'ūs*: one of the most noted of the Cynic philosophers, pupil of Diogenes: lived B.C. 1st c.; b. Gadara, in Syria. He was originally a slave, and acquired considerable wealth by usury, but lost it all again; and in mortification strangled himself. He satirized the philosophers of his time in terms so severe, that the most biting satires were afterward designated Menippean. Lucian pronounces him 'the greatest snarler and snapper among all the old dogs' (the Cynics). His works, 13 in number according to Diogenes, all are lost.

MENISCUS, n. *mēn-īs'kūs* [Gr. *menis'kōs*, a little moon—from *mēnē*, the moon]: a lens, convex on one side and concave on the other, with a sharp edge, resembling in section the appearance of the new moon. **MENISCUSES**, n. plu. *mēn-īs'kūs-ēz*, or **MENISCI**, n. plu. *mēn-īs'sī*. **MENIS'CAL**, a. *-kāl*, pertaining to a meniscus. **MENIS'COID**, a. *-koyd* [Gr. *eidos*, resemblance]: having the form of a meniscus; crescent-shaped.

MENISPERMACEÆ, *mēn-ī-spēr-mā'sē-ē*: natural order of exogenous plants, mostly tropical and sub-tropical; creeping and twining shrubs, the wood of which is frequently disposed in wedges, and without the zones usual in exogenous stems. The leaves are alternate, generally

MENISPERMIC—MENNONITE.

simple, destitute of stipules; the flowers small, unisexual, often in large panicles or racemes. There are about 200 known species, including those which by some botanists have been formed into the two small separate orders *Schizandraceæ* and *Lardizabalaceæ*. The true *M.* are generally bitter and narcotic; some are very poisonous, and some are valuable in medicine: see CALUMBA: CISMAMPELOS: COCCULUS.

MENISPERMIC, a. *měn'ĩ-spér'mĩk* [Gr. *mēnē*, the moon; *sperma*, seed—from the crescent-like form of the seed]: denoting an acid obtained from the seeds of the plant *Menisper'mum coc'cūlus*, or *Coc'cūlus in'dicus*. **MEN-ISPER'MINE**, n. *-spér'mĩn*, an alkali obtained from the *Cocculus indicus*.

MENIVER: see MINEVER.

MENNO, *měn'nō*, SIMONS: founder of the later school of Anabaptists (q.v.) in Holland: 1496–1561; b. Witmarsum, Friesland. He took orders 1524, and officiated for some years as a priest, first in the village of Pinjum, afterward in his native place. The study of the New Testament, about 1530, excited grave doubts in his mind regarding the truth of the prevalent doctrine and constitution of the church; and in 1536 he withdrew from the church altogether, attached himself to the party of the Anabaptists, was rebaptized at Leeuwarden, and appointed a teacher and bishop at Gröningen. Thenceforth, his great endeavor was to organize and unite the scattered members of the Anabaptist sect in Holland and Germany. With this design, he spent much time in travelling; but Friesland was his chief residence until persecution compelled him to flee to Wismar. Finally, he settled at Oldeslohe, in Holstein, where he found protection, and even encouragement, and was allowed to establish a printing-press for diffusion of his religious opinions. Here he died. He was a man of gentle and modest, but deeply earnest, devout, and spiritual nature, with no trace of the wild fanaticism of the earlier Anabaptists. His book of doctrine, *Fundamentbuch von dem rechten Christlichen Glauben*, was published 1539. See ANABAPTISTS.

MENNONITE, n. *měn'ōn-īt* [after *Menno*, their founder, a German, 1536]: an Anabaptist sect originating in Holland, who teach that the New Testament is the only rule of faith, that there is no original sin, that infants should not be baptized, and that oaths and physical force are unlawful. As they publish no statistics, their numbers are conjectural. They came to the United States first 1683, and, attracted by the Friends under Penn, 500 families settled in Pennsylvania within a half century. They are now found mostly in Penn., N. Y., Md., O., Ind., and Canada. They have a publishing house at Elkhart, Ind. The pastors serve without pay; the bishops, elders, and deacons meet in annual district conferences. The following are secessions from the main body in America: the *Reformed* or strict Mennonites, who seceded 1811; the

MENOLOGY—MENOMINEES.

New Mennonites, a small organization dating from 1847; the *Evangelical Mennonites*, seceders 1856 from the previous secession; the *Amish*, scarcely distinguished from the Reformed.—The report for 1902 places the whole number of Mennonites in the U. S. at 59,274; value of church property \$643,800. See MENNO, SIMONS: ANABAPTISTS.

MENOLOGY, n. *měn-ōl'ō-jǐ* [Gr. *mēn* or *mēna*, a month; *logos*, a discourse]: in the *Gr. Chh.*, a calendar of saints or martyrs; a register of months.

MENOMONIE, *me-nōm'ō-ne*, city, co. seat of Dunn co., Wis.; 25 m. n.w. of Eau Claire, on the Red Cedar r. and Chicago Milwaukee and St. Paul, and Chicago St. Paul Minnesota and Omaha railways. It has considerable trade in lumber; has a number of carriage factories, machine shops, a sash factory, and brick-yards. The co. court-house is a handsome building; the public schools are excellent; there are about 10 churches, and several newspapers. Pop. (1880) 2,589; (1890) 5,491; (1900) 5,655.

MENOMINEE, *me-nōm'ī-ně*: city; cap. of Menominee co., Mich.; on Green bay, the Menominee river, and the Chicago and Northwestern, the Chicago Milwaukee and St. Paul, and the Wisconsin and Michigan railroads; opposite Marinette, Wis. It is the natural outlet of an extensive iron, marble, and lumbering region, and is a notable shipping point for lumber, flour and grain. In 1902 it had 2 national banks, combined capital \$200,000; deposits \$1,621,520; loans and dis. \$1,280,210; tl. res'ces \$2,149,592; and surplus \$100,000. There were 15 churches, public high (cost \$50,000) and 5 graded schools, 3 parochial schools, commercial college, public library, 2 hospitals, 12 lumber mills, wood-pulp and paper mills, 2 breweries, saw and boiler works, and 2 daily and 3 weekly newspapers. The city also contains the Mascot Kennels, one of the largest in the country and widely noted for its exclusive breeding of St. Bernard dogs. The assessed valuation 1902 was \$5,227,869, tax rate was \$24.70 per \$1,000. In 1903 (Mar.) the bonded debt was \$102,500; school debt \$40,000, and assets \$5,000. Pop. (1890) 10,630; (1894) state census 12,532; (1900) 12,818.

MENOMONEES, *mē-nōm'ō-nēz*, or MENOM'INEES, *-ī-nēz*: a tribe of Algonquin Indians, until the 19th c. located in Wis. on the Menomonee r., which empties into Green Bay. The name is derived from the wild rice that grows abundantly near the mouth of the river. The Jesuits Allouez and André, who established a mission among the M. about 1670, described them as lighter in complexion than the other Indians. They remained friendly to the French, aiding in the relief of Detroit against the Foxes 1712, and taking part in Braddock's defeat, and other battles of the French and English war. During the American revolution most of them went over to the British; in the war of 1812, also, they sided with them, taking part in the capture of Mackinaw, 1812, July; fighting under Tecumseh at Ft. Meigs 1813; being repulsed at Sandusky, and engaged at the battles of Mackinaw and Prairie du Chien, 1814. In 1817, Mar. 30,

they ratified through their chiefs the French, English, and Spanish grants of land to Clarke, Edwards, and Chouteau. Repeated treaties were made with the United States, 1825, 27, 31, 36, 48, 52, and 54. Since 1854 they have been on a reservation of poor land on the upper Wolf and Oconto rivers, 50 m. from Green Bay, Wis. They are decreasing; numbering (1822) about 3,900; (1872) 1,480; (1890) 1,311. About half of them are Rom. Caths. Their language is a dialect of the Algonquin.

MENOPOME, *mĕn'ō-pōm* (*Protonopsis horrida*): one of the largest of batrachians; found in the Ohio and other rivers of the same region, and known on their banks by many names, such as Hellbender, Mud Devil, Ground Puppy, Young Alligator, and Tweeg. In form, it resembles the newt and salamander; the head is flat and broad; the teeth in two concentric rows in the upper jaw, and one row in the lower, numerous and small; it is about two ft. long, and of slaty gray color, with dark spots. Notwithstanding its small teeth, it is fierce and voracious, feeding chiefly on fish and batrachians; and



Menopome (Protonopsis horrida).

is commonly but erroneously regarded as venomous.

MENORRHAGIA, n. *mĕn'ōr-rā'jī-ā* [Gr. *mĕn*, a month; *mĕnēs*, a woman's menses; *rhēgnu'mi*, I break or burst forth]: an immoderate flowing of the menses.

MENSES, n. plu. *mĕn'sēz* [L. *mensis*, a month]: the monthly discharges of women: see **MENSTRUATION**.

MEN'SHIKOFF (or **MEN'SHIKOW**), **ALEXANDER DAN-LOVITCH**: Russian field-marshal and minister of state: 1672, Nov. 28—1729, Oct. 22 (Nov. 2); b. Moscow. He was a baker's apprentice, when his intelligent countenance attracted the notice of Gen. Lefort, who took him into the service of Peter the Great. He discovered a conspiracy among the Czar's guards, and his rapid promotion was secured. 1706, Oct. 30, he defeated the Swedes at Kalisch; was made a field-marshal on the field of Pultawa; 1713 took Stettin, but gave it up to Prussia, contrary to the will of the czar; was court martialed, condemned to death but pardoned on payment of a heavy fine. During the reign of Catharine I., he regained his influence at court, and, after her death, governed Russia with almost absolute authority in the name of Peter II., whose father-in-law

he was just about to become, when he was overthrown by Dolgorouki, and banished to Siberia 1727, Sep. His immense estates and treasures were confiscated.

MEN'SHIKOFF (or MEN'SHIKOW), ALEXANDER SERGEJEVITCH, Prince: Russian general and statesman: 1789-1869; great-grandson of Alexander Danilovitch M. He served in the campaigns of 1812-15, rose to the rank of gen., and, after the accession of Emperor Nicholas, was employed both in diplomatic and military services. In the Turkish campaign of 1828, he took Anapa after a short siege, but received so severe a wound before Varna as compelled his retirement. He was afterward at the head of the Russian navy, and raised it to high efficiency. In 1853, Mar., he was sent as ambassador to Constantinople, where his overbearing behavior produced a speedy rupture between the Porte and the czar, and brought about the Crimean war. In this war he commanded both the land and naval forces of Russia, and evinced the utmost energy in defending Sebastopol. In 1855, Mar., he was appointed commander of Cronstadt. M. was one of the most prominent members of the old Russian party.

MENSTRUAL, a. *měn'strû-ăl* [L. *menstrualis*, every month—from *mensis*, a month: F. *menstruel*]: happening once a month; lasting a month; pertaining to a menstruum. MEN'STRUA'TION, n. *-ă'shûn*, monthly discharge of blood from the generative organs of the human female during the period in which she is capable of procreation. The first appearance of this discharge, to which the terms *menses* and *catamenia* (each having reference to the monthly period) are indiscriminately applied, is a decided indication of the arrival of the period of commencing womanhood, and is usually accompanied by an enlargement of the mammary glands, and other less important changes. In this country, menstruation usually commences between the 14th and the 16th years, and terminates between the 48th and 52d years. The interval usual between the successive appearances of the discharge is about four weeks, though it is often shorter: the duration of the flow is usually three or four days, but is liable to great variations. The first appearance of the discharge is usually preceded and accompanied by pain in the loins and general disturbance of the system, and in many women these symptoms invariably accompany the discharge. As a general rule, there is no menstrual flow during pregnancy and lactation, and its cessation is one of the first signs that conception has taken place. MEN'STRUANT, a. *-ănt*, subject to monthly flowings. MEN'STRUOUS, a. *-ûs* [L. *menstrûûs*]: pertaining to the monthly discharges of women; having the monthly discharge.

MENSTRUUM, n. *měn'strû-ûm*, MEN'STRUA, n. plu. *-strû-ă*, or MEN'STRUUMS, n. plu. *-ûmz* [L. *menstrûûm*, that which lasts or continues a month—from *mensis*, a month]: a solvent; any liquor used in dissolving.

Note.—So called because the old chemists supposed

MENSURATION.

that the moon had a mysterious influence on the making of their preparations for dissolving metals, etc.

MENSURATION, n. *měn'sū-rā'shūn* [mid. L. *mensurātīōnem*, a measuring—from *mensurātus*, measured—from L. *mensūra*, a measure]: the act or art of measuring or taking the dimensions of anything; a branch of the mathematics which gives rules for finding the lengths and areas of surfaces and the volumes of solids. **MEN'SURABLE**, a. *-sūr-ă-bl* [It. *mensurabile*; F. and Sp. *mensurable*, measurable]: that can or may be measured. **MEN'SURABIL'ITY**, n. *-bīl'ī-tī*, or **MEN'SURABLENESS**, n. *-bl-nēs*, the quality of being measurable; the capacity of being measured. **MEN'SURAL**, a. *-shû-rāl*, pertaining to measure.

MENSURATION: branch of the application of arithmetic to geometry which teaches, from the actual measurement of certain lines of a figure, how to find, by calculation, the length of other lines, the area of surfaces, and the volume of solids. The determination of lines, however, is generally treated of under Trigonometry (q.v.), and surfaces and solids are now understood to be the sole subjects of mensuration. As the length of a line is expressed by comparing it with some well-known unit of length, such as a yard, a foot, an inch, and saying how many such units it contains, so the extent of a surface is expressed by saying how often it contains a corresponding superficial unit—that is, a square whose side is a yard, a foot, an inch; and the contents of solid bodies are similarly expressed in cubes or rectangular solids having their length, breadth, and depth, a yard, a foot, an inch. To find the length of a line (except in cases where the length may be calculated from other known lines, as in trigonometry) we have to apply the unit (in the shape of a foot-rule, a yard measure, a chain), and discover by actual trial how many units it contains. But in measuring a surface or a solid, we do not require to apply an actual square board, or a cubic block, or even to divide it into such squares or blocks; we have only to measure certain of its boundary-lines or *dimensions*; and from them we can calculate or infer the contents. To illustrate how this is done, suppose that it is required to determine the area of a rectangular figure ABCD, of which the side AB is 7 inches, and the side AC 3 inches. If AC be divided at the points F and E into 3 portions, each 1 inch long, and parallels be drawn from F and E to AB or CD; and if AB be similarly divided into 7 parts, of 1 inch each, and parallels be drawn to AC or BD through the points of section, then the figure will be divided into a number of equal squares or rectangular figures, whose length and breadth are each 1 inch; and as there are 3 rows of squares, and 7 squares in each row, there must be in all 7×3 , or 21 squares. In general terms, if *a* and *b* be the lengths of two adjacent sides, there are *a* rows of little squares, and *b* squares in each row. Hence *the area of a rectangle =*

the product of two adjacent sides. The areas of other figures are found from this, by the aid of certain relations or properties of those figures demonstrated by pure geometry; for instance, the area of a parallelogram is the same as the area of a rectangle having the same base and altitude, and is therefore equal to the base multiplied by the height. As a triangle is half of a parallelogram, the rule for its area can be at once deduced. Irregular quadrilaterals and polygons are measured by dividing them into triangles, the area of each of which is separately calculated. For the area of the circle, see CIRCLE. By reasoning similar to that in the case of areas, it is shown that the volume of a rectangular parallelepiped or prism is found in cubic inches by multiplying together the length, breadth, and depth in inches; and the oblique parallelepiped, prism, or cylinder, by multiplying the area of the base by the height.

MENTAGRA, n. *měn-tǎ'grǎ* [L. *mentum*, the chin; Gr. *agra*, a seizure]: a disease affecting the beard, mustache, whiskers, and inner part of the nostrils—caused by minute fungi, or vegetable parasites, at the roots of the hair.

MENTAGRAPHYTE, n. *měn-tǎ'grǎ-fīt* [L. *mentum*, the chin; Gr. *agra*, a seizure, and *phuton*, a plant]: cryptogamous plants, or mold, supposed to be the cause of the cutaneous disease mentagra; synonym of MENTAGRA.

MENTAL, a. *měn'tāl* [F. *mental*—from mid. L. *mentālis*—from L. *mentem*, the mind: It. *mentale*]: pertaining to the mind; intellectual. MEN'TALLY, ad. -*lī*, in the mind; in thought or meditation. MENTAL DISEASES (see INSANITY: ETC.). MENTAL PHILOSOPHY (see MIND). MENTAL RESERVATION, a practical fraud, in which a part of the truth only is revealed; the act of mentally adding to words spoken that which destroys their truthfulness or value; an incomplete statement.

MENTAL, n. *měn'tal* [etym. doubtful]: a basket made water-tight, and having four ropes attached, by which two men lift water from a stream or cistern and discharge it into a trench for irrigation.

MENTHA, n. *měn'thǎ* [L. *mentha*, mint]: a genus of plants whose species are strongly scented and yield volatile oils, ord. *Labiātæ*. MENTHENE, n. *měn-thě'nē*, or MENTHOL, n. *měnth'ōl* [L. *olĕum*, oil]: two organic bodies occurring in oil of peppermint: menthol is the name given to a crystalline substance deposited from oil of peppermint, and used in alcoholic solution (10 parts of alcohol to 1 of menthol), or solid in form of a pencil, as a remedy for headache, applied to the seat of the pain.

MENTION, n. *měn'shŭn* [F. *mention*—from L. *mentiōnem*, a mentioning: comp. L. *mēmīnī*, I remember: It. *menzion*]: a hint or suggestion; a brief statement in words or writing: V. to write or express in words any particular circumstance or fact; to utter a brief remark; to name. MEN'TIONING, imp. MEN'TIONED, pp. -*shŭnd*. MEN'TIONABLE, a. -*ǎ-bl*, that can or may be mentioned.

MENTONE, *měn-tō'nā* (Fr. *Menton*, *mǒng-tōng*): town in the dept. of Alpes Maritimes, France; pleasantly situated on the shore of the Mediterranean, and from its s. exposure, and a high sheltering range of mountains on the n., it has a salubrious and agreeable climate. In its environs are groves of orange, lemon, and olive trees. Latterly M. has become a favorite winter resort of invalids and 'health-loungers' from England, Germany, and America; and is greatly improved as a place of residence by the addition of numerous hotels, pensions, etc. In 1860, by vote of the inhabitants, M. was detached from the small principality of Monaco, and annexed to France; the French govt. paying 4,000,000 of francs to the Prince of Monaco for relinquishing his rights, and according to him certain privileges. M. is within a mile and a half of the Italian frontier, on the railway and Corniche road from Nice to Genoa. Its bone-caves are very notable, 90 ft. above the Mediterranean, on the e. bay: they contain fossils and implements of pre-historic times, and, 1872, yielded a fossil human skeleton from a depth of 21 ft. 6 inches. Pop. (1876) 6,891.

MENTOR, n. *měn'tér* [*Mentor*, a wise Greek, friend of Ulysses, sung of by Homer]: wise and faithful monitor or adviser. **MENTO'RIAL**, a. *-tō'rĭ-ăl*, containing advice.

MENTOR, *měn'tor*: son of Alcimus and trusted friend of Ulysses, who, on setting out for Troy, left to him the charge of his household. By M., Telemachus was educated, and his name became a sort of appellative for an instructor and faithful, sagacious counselor of the young.

MENTUM, n. *měn'tŭm* [L. *mentum*, the chin]: the basal portion of the labium or lower lip in insects.

MENTZ: see MAINZ.

MENU, n. *měn-ŭ'*, **MENUS**, n. plu. *měn-ŭz'* [F.]: a bill of fare for table.

MEN'NU: see MANU.

MENU'RA: see LYRE-BIRD.

MENZALEH, LAKE, *měn-zâ'leh*: lake in Egypt, extending e. from the Damietta branch of the Nile, and separated from the Mediterranean by a narrow strip of land, through which there are several openings. It receives the Pelusiæ and Tanitic branches of the Nile; and is 37 m. in length, by about 16 m. in average breadth. Its surface is studded with islands, the most interesting of which is Tennees, anc. Tennesus, with Roman remains of baths, tombs, etc. There is an extensive fishery, and the shores abound in wild-fowl. The line of the Suez Canal passes through the e. portion of this lake.

MENZEL, *měn'tsəl*, **WOLFGANG**: German author: 1798, June 21—1873, Apr. 23; b. Waldenburg, Silesia; son of a medical practitioner. He studied at Jena and Bonn, was for two years schoolmaster at Aargau, in Switzer-

land, and 1824 returned to Germany. He made himself known in the literary world by his *Streckverse* (Heidelb. 1823), a volume replete with poetry and wit, and opening novel and ingenious views of art and literature. He then engaged with several coadjutors in a periodical *Europäische Blätter* (Zür. 1824-5), attacking the heartlessness and formality of German literature. Including in his attack the school of Goethe, he became involved in controversy. A succession of controversies followed his various publications; among which may be noticed *Geschichte der Deutschen* (3 vols. Zür. 1824-5, several editions); *Die deutsche Literatur* (2 vols. Stuttg. 1828, several editions); *Taschenbuch der neuesten Geschichte* (5 vols. Stuttg. 1829-33); *Mythologische Forschungen und Sammlungen* (1842, etc.); and *Geschichte Europas von 1789-1815* (1853). As a poet, he acquired reputation by a volume *Rübezahl* (1829), and *Narcissus* (1830). His *Gesänge der Völker* (1851) is a valuable lyrical collection. After the July revolution, he set himself to counteract the French influence that set in strongly among the youth of Germany, whence Börne gave him the nickname of *der Franzosenfresser* ('the Frenchman-eater'). He also published *Preussen und Oesterreich im Jahre 1866* (1866); history of the war of 1870-1; etc. His library, 18,000 vols., was acquired by the Univ. of Strasburg.

MEPHISTOPHELES, n. *měf'is-tŭf'č-lēz* [a character in Goethe's *Faust*]: a devil next in rank to Satan; he was one of the seven chief devils in the ancient demonology, and second of the fallen archangels, a subtly suggestive tempter: hence, a sneering, jeering, yet subtle tempter—a well-known type being the cold, scoffing fiend of Goethe's *Faust*. MEPH'ISTOPH'ILUS, n. *-i-lūs*, formerly a familiar and joocular name of address, arising from the popularity of the legends of Faustus. MEPH'OSTOPH'ILUS, in *Shakespeare*, name of a familiar spirit.

MEPHITIC, a. *mě-fŭ'ŭk* [L. *mephitis*, a noxious pestilential exhalation: F. *méphitique*]: offensive to the smell; noxious; deadly. MEPHITIS, n. *mě-fŭ'ŭs*, or MEPHITISM, n. *měf'ŭ-tŭzm*, any foul or noxious exhalation—applied to carbonic acid gas.

MEPPEL, *měp'pél*: important trading and manufacturing town in the Netherlands, province of Drenthe, near the n. boundary of Overijssel. It has a trade in butter, cattle, rye, and buckwheat. In some years about 4,000,000 lbs. of butter are brought to market. The principal manufactures are spinning flax, weaving lincns, sailcloth, and coarse striped woolen fabrics. There are also corn, saw, and oil mills, breweries, etc. The union of several important water-ways with the Meppeller Diep, through which they flow into the Zuider Zee, brings a large shipping-trade to the town. M. is about nine centuries old, and has often suffered the evils of war, being favorably situated for receiving a garrison.—Pop. 9,000.

MEQUINEZ: see MIKNAS.

MERCANTILE—MERCANTILE LAW.

MERCANTILE, a. *mér'kän-tíl* [It. and F. *mercantue*, connected with trade—from mid. L. *mercantilis*, mercantile—from L. *mercātus*, trade, traffic; *mercans*, a purchaser]: relating to trade; trading; carrying on commerce; commercial.

MER'CANTILE AGENCY: see COMMERCIAL REGISTER.

MER'CANTILE LAW: the only branch of municipal law which, from the necessity of the case, is similar, and in many respects identical, in all civilized and trading countries. In determining the relations of the family, the church, and the state, each nation is guided by its own peculiarities of race, of historical tradition, of climate, and numberless other circumstances, which are almost wholly unaffected by the conditions of society in the neighboring states. But when the arrangements for buying, selling, and transmitting commodities from state to state alone are in question, all men are much in the same position. The single object of all is *disputes and delay*. Very early in the trading history of modern Europe, it was found that the only method for attaining these objects was by establishing a common understanding on leading points of mercantile, particularly of maritime law. This was effected by the establishment of those maritime codes of which the most famous, though not the earliest, was the *Consolato del Mare*, sometimes spoken of as a collection of the maritime laws of Barcelona, but seeming to have been rather a compilation of the laws and trading customs of various Italian cities—Venice, Pisa, Genoa, and Amalfi, together with those of the cities with which they chiefly traded—Barcelona, Marseille, and the like. That it was published at Barcelona toward the end of the 13th c., or the beginning of the 14th, in the Catalonian dialect, is no proof that it originated in Spain; and the probability is that it is of Italian origin. As commerce extended itself to the n.w. coasts of Europe, similar codes appeared—the *Guidon de la Mer*, the *Rôles d'Oléron*, the *Usages de Damme*, and, most important of all, the Ordinances of the great Hanseatic League. As the central people of Europe, the French early became distinguished in maritime law; and one of the most important contributions ever made to it was the famous ordonnance of 1681, which formed part of the ambitious, and in many respects successful, legislation and codification of Louis XIV. See CODE. All these earlier attempts at general mercantile legislation were founded, of course, on the Roman civil law, or rather on what that system had borrowed from the laws which regulated the intercourse of the trading communities of Greece, perhaps of Phœnicia and Carthage, reduced to a system by the Rhodians.

From the intimate relation between Scotland and the continent of Europe, the lawyers of Scotland became early acquainted with the commercial arrangements of the continental states; and until the rebellions of 1715

MERCANTILE SYSTEM—MERCATOR'S CHART.

and 45, mercantile law was cultivated in Scotland with much care and success. The work of Lord Stair, greatest of all legal writers of Scotland, is particularly valuable in this department.

In England, the case was very different. After the loss of her French provinces, the legal system of England became wholly insular, and there was no branch in which it suffered more by its isolation from the general stream of European progress than the law-merchant. It was Lord Mansfield who, whether guided by the wider traditions of his original country, or deriving his views from the source from which these traditions sprang—viz., the Roman law, as modified and developed by continental jurisprudence, introduced those doctrines of modern commercial law which English lawyers have since developed with so much acuteness and logical consistency.

MERCANTILE SYSTEM: see BALANCE OF TRADE.

MERCAPTAN, n. *mêr-kăp'tăn* [new L. *mercūrius*, mercury; L. *captans*, taking or seizing: another derivation is from L. *mercurio corpus aptum*]: chemical substance in the form of a liquid, composed of sulphur, carbon, and hydrogen—so named from its very energetic action on mercury; ethyl sulph-hydrate; the sulphur analogue of ethyl alcohol—that is, alcohol in which oxygen is replaced by sulphur.

MERCATOR, *mêr-kă'tér*, GERARDUS (Latinized form of GERHARD KAUFFMANN—i.e., Merchant): 1512, Mar. 5—1594, Dec. 2; b. Rupelmonde, Flanders. He studied and took a degree in philosophy at the Univ. of Louvain; afterward studying specially mathematics and geography: he learned engraving also, and was employed on maps by Charles V. 1559, he was made cosmographer to the Duke of Juliers and Cleves. He published maps and descriptions of Europe, France, Germany, the British Isles, and the world. His name has been perpetuated by his method of laying out maps and charts by a projection of the surface *in plano*, the meridians being represented by parallel lines intersected at right angles by the straight horizontal lines representing parallels of latitude. Edward Wright, however, seems to have used this projection in nautical maps. The most important of M.'s works are a *Chronological Table from the Creation to 1568* (1569); series of *Geographical Tables* (1578); treatise *De Creatione ac Fabrica Mundi* (1594); *Atlas* (1595), or geographical meditations; and a number of theological writings. He died Duisburg.

MERCATOR'S CHART or PROJECTION, *mêr-kă-têrs chârt* [after *Mercator*, a Flemish geographer]: a chart or map on which the surface of the earth is represented as a plane surface, with the meridians and lines of latitude all straight lines: see MAP.

MERCED—MERCER.

MERCED, n. *mér'sěd* [Sp. *mercéd*—from L. *merces* or *mercēdem*, wages, a reward]: a reward or gift for services done.

MERCENARY, a. *měr'sě-nār-ĭ* [F. *mercenaire*; L. *mercenāriŭs*, one working for wages—from *mercēs*, hire or wages: It. *mercenario*]: actuated by the hope of gain or reward; venal; that may be or is hired, as troops; greedy of gain; sordid; mean; selfish: N. one who is hired; a soldier hired into foreign service; a hireling. **MERCENARILY**, ad. *-nār-ĭ-lĭ*.

MERCER, n. *měr'sěr* [F. *mercier*, a mercer—from mid. L. *mercērius*, a trader—from L. *mercem*, goods, wares]: a dealer in silks, woolen cloths, and laces. **MERCERY**, n. *měr'sěr-ĭ*, the goods sold by a mercer. **MERCERSHIP**, n. the business of a mercer. **MERCERS' COMPANY**, one of the twelve great livery companies of London.

MERCER, *měr'sěr*, HUGH: 1721–1777, Jan. 12; b. Aberdeen, Scotland. He was educated at the Univ. of Aberdeen; entered the medical profession; 1743 served at Culloden under Charles Edward, the 'young Pretender,' as asst. surgeon; 1747 came to America, and settled as physician near what is now Mercersburg, Penn.; 1755 served under Braddock as volunteer; was appointed capt.; at the battle of Monongahela, July 9, he was wounded, and wandered alone through the forest till he reached Ft. Cumberland, 160 m. distant. The city of Philadelphia awarded him a medal for gallantry on this occasion. In 1758 he was made licut.col., and commanded the post at Ft. Duquesne for some time. At the outbreak of the American revolution he was a physician at Fredericksburg, Va., but at once entered the conflict, organizing a regt., of which he was made col., 1775; and 1776, June 5, was commissioned a brig.gen. by congress through Washington's influence, with whom he served on the retreat through N. J. At the battle of Trenton he commanded a column, and led the van in the night-march on Princeton. At the subsequent battle he was severely wounded while vainly trying to rally his militia, and was left for dead on the field. After the battle he was removed to a neighboring farm-house, where he died in the arms of his aide-de-camp, Maj. Lewis, about a week later. He was buried at Philadelphia, when fully 30,000 people are said to have attended his funeral. A monument was erected to his memory in Laurel Hill cemetery in 1840, and a grateful nation educated his son Hugh at public expense.

MERCER, JOHN FRANCIS: 1758–1821, Aug. 30; b. Stafford co., Va. He graduated 1775 at William and Mary College; served as aide to Gen. Charles Lee in the continental army till the battle of Monmouth, when he resigned from the army, but soon enlisted again and served through the war. Afterward he studied law under Jefferson, and, 1782–85, served in the continental congress as delegate from Va. In 1785 he married and removed to West River, Md.; 1792–94, represented Md. in congress;

MERCERSBURG THEOLOGY.

served in the state legislature; then, 1801-03, as gov. of Md.; afterward again in the legislature. He died while on a visit to Philadelphia.

MERCERSBURG THEOLOGY: embodiment of certain speculations in Christian doctrine whose chief originator (abt. 1836) was the Rev. F. A. Rauch, Ph.D., and which was developed by John W. Nevin, D.D., prof. in the German Reformed Theol. Seminary, then at Mercersburg, Penn. These speculations—whose derivation seems traceable in part, at least, from Schleiermacher—find their central point in peculiar views of the person of Christ and the nature of man. Concerning *the person of Christ*, Dr. Nevin says: He has only one life, which is in all respects a true human life; the incarnation is the completion of humanity, and the glorified Christ manifests the advancement of human nature to the power of a divine life. Concerning *human nature*: Humanity is a generic life, of which man is the manifestation, with a special bodily organism by which it becomes personal. This generic humanity sinned in Adam, and thus became corrupt in all individual men. This generic humanity also, Christ united with his divinity, merging both in one generic human life which is a form of the life of God. Its sinning in Adam and its consequent corruption are to be regarded only as imperfect development. God is imperfectly manifested in man generally, but perfectly in Christ and through him finally in the redeemed. Concerning *justification*: Our nature reaches out after a real union with the being of God as the consummation of its own life. The incarnation is the proper completion of humanity. The Word became flesh—not a single man only, but humanity in its universal conception. Thus Christ, became the origin of a new order of existence for the human world as such. Christianity is a life, revealed at first in Christ, but continued also in the church. It flows over from Christ to his people always in this form. They do not simply bear his name and acknowledge his doctrine, but are so united to him as to have part in the substance of his life itself. With his substance thus communicated to the soul, come his merit, his holiness, his power, his glory. When Christ died and rose, humanity died and rose in his person. Our nature was thus restored and elevated, and by receiving this renovated theanthropic nature we are saved. Concerning *the church*: The divine-human nature as it exists in the person of Christ passing over, as has been said, to his people, constitutes the church ‘which is his body, the fullness of him who filleth all in all.’ The process is not mechanical, but organic. It takes place in the way of history. It is a growth, a regular living development. ‘The church must have a true theanthropic character throughout, and is, in very deed, the depository and continuation of the Savior’s theanthropic life, with powers and resources which imply a real blending of the human and divine.’ Concerning *the sacraments*: Some, at least, of these powers and resources are vested in the sacraments

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of the church, giving them a real objective force. While union with Christ is by regeneration, regeneration is by the church. The sacraments convey to believers the divine-human life of Christ. Unbelievers receive only the outward sign, because they have not the vital organ of reception for the inward grace. Yet the inward grace is there, and believers receive both—the outward sign and the theanthropic life of Christ. This gives the sacrament an extraordinary power as supplying a mode of receiving Christ which can be had nowhere else. Where the souls of believers are prepared to receive it, the sacrament itself conveys into their persons the life of Christ.

The M. T. has been developed in three lines successively—philosophical, theological, liturgical. Philip Schaff, D.D., had a prominent share in the movement. At first it excited suspicion and controversy. These have long since ceased; and M. T., no longer a living issue in a conflict, has done a formative and constructive work of recognized value as it has become merged with other elements in the general stream of theological thought.

MERCHANT, n. *mér'chänt* [OF. *marchant*; F. *marchand*, a shopkeeper, a dealer—from It. *mercantante*, a trafficker—from mid. L. *mercatan'tem*, selling: It. *mercatare*, to buy and sell; *mercato*, a market—from L. *mercūrī*, to bargain, to buy]: one who buys and sells goods of any kind, especially upon a large scale; one carrying on trade with foreign countries; a wholesale dealer. MERCHANT-ABLE, a. *mér'chänt-ä-bl*, fit for market; such as may be bought and sold in market at current prices. MERCHANT-DISE, n. *mér'chän-dīz*, anything bought and sold in trade; goods; wares. MER'CHANTMAN, a trading ship or vessel. MERCHANT SERVICE, the mercantile marine of the country. MERCHANT-SHIP, a trading ship; a ship carrying passengers or cargo, or both.—SYN. of 'merchant': broker; dealer; factor; furnisher; maker; mercer; seller; trader; warehouseman; trafficker.

MER'CHANT, COMMISSION: see COMMISSION MER-CHANT: FACTOR.

MERCHANT SHIPPING ACTS.

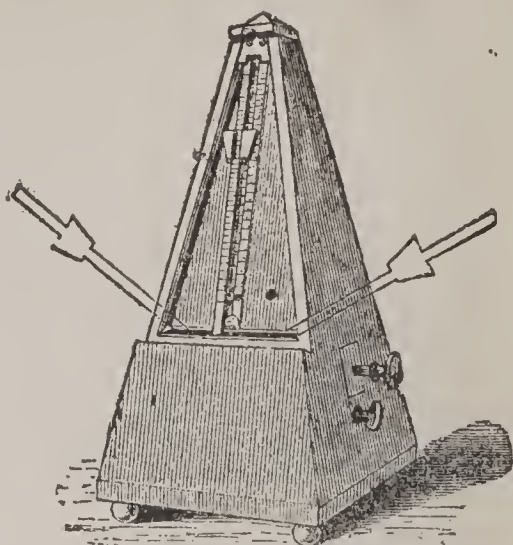
MERCHANT SHIPPING ACTS: acts of the British parliament, 1854, and subsequent years; forming an almost complete code of laws affecting the merchant-shipping of Britain and British colonies. The acts since 1854 have been mostly amendments or supplements to the act of that year. The act of 1876 was Mr. Plimsoll's important bill (see end of article). That of 1884 was Joseph Chamberlain's bill, whose main aim was to reduce the terrible loss of life at sea. It fixed the responsibility of sending unseaworthy ships to sea; applied the provisions of the Employers' Liability Bill, rendering shipowners liable to heavy damages, payable to widows and orphans, if unseaworthiness or negligence is proved; remodelled the measurement of tonnage; reconstructed the inspecting authorities at the ports; and regulated the conditions of insurance, so that shipowners should in no case insure ships for a larger sum than their actual value. The act of 1867, with the exception of two unimportant clauses, is occupied with the enforcement of proper sanitary conditions on board ships. The general superintendence of matters relating to British merchant-ships and seamen is intrusted to the Board of Trade, which is invested with powers for compelling local bodies, and shipowners or shipmasters, to perform the duties which the Shipping Acts impose.

It is provided that no ship shall be deemed a British ship unless she belong wholly to owners who are of one of the following descriptions: 1. Natural-born subjects; 2. Persons made denizens, or persons naturalized; 3. Bodies corporate established under, subject to the laws of, and having their principal place of business in the United Kingdom or some British possession. Every British ship, with a few unimportant exceptions, must be registered; the registration is to comprise the name of the ship, which cannot afterward be changed without permission of the Board of Trade, and the names and descriptions of the owners; also the tonnage, the build and description of the vessel, the particulars of her origin, and name of the master. A certificate of registry is given by the registrar to the master. The acts require certain particulars to be marked on ships in specified ways—viz., the name, the official number, the registered tonnage, a scale denoting the draught of water, the deck-line, and the load-line; and there are penalties for defacing or not maintaining such marks, and for making them inaccurately.

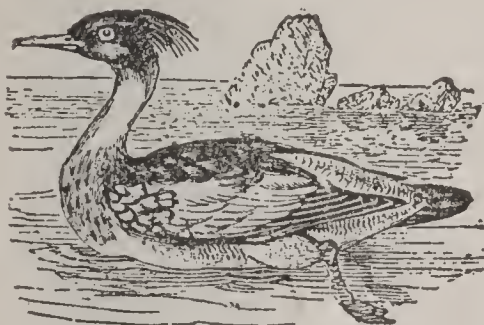
The property in every ship is, for purposes of registration, divided into sixty-four shares. Counting joint-owners (not exceeding five for any one share, and not entitled to dispose in severalty of their respective interests) as constituting one person only, not more than 32 persons can be registered at the same time as owners of a ship. The power of disposing of the ship or its shares is vested exclusively in registered owners; though others concerned are to have their interests protected on application to the proper court.



Menhir.



Maelzell's Metronome. The dotted lines show the extent of vibration of the pendulum.



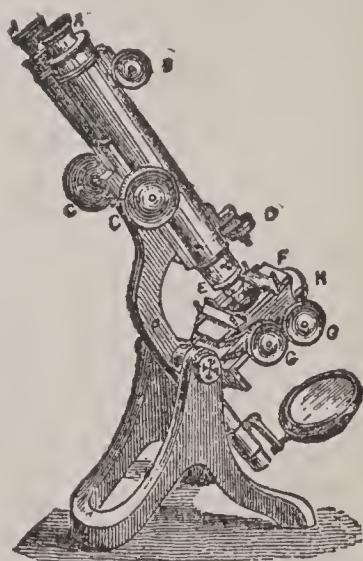
Red-breasted Merganser (*Mergus serrator*).



Meniscus.



European Dee-eater (*Merops apiaster*).



Binocular Microscope: A, A, Eye pieces; B, Rack to adjust the same to width of eyes; C, Rack for coarse adjustment of focus; D, Lever for fine adjustment of focus; E, Objective; F, Stage; G, G, Rectangular traversing movement; H, Rotatory movement; I, Illuminating mirror.

Under the heading 'Masters and Seamen,' it is provided that local marine boards with membership partly appointed and partly elected annually by shipowners, shall be established at certain ports of the United Kingdom. The local marine board is required to establish an office under a superintendent whose duty it is to keep registries of the names and character of seamen; to superintend and facilitate their engagement and discharge; to provide means for securing the presence on board at the proper time of men who are so engaged; to facilitate apprenticeships to the sea-service; etc.: also to hold examinations for persons who intend to become masters or mates of certain classes of ships. And, with a few exceptions specified, no person can be employed in a foreign-going ship as master, or first, or second, or only mate, or in a home-trade passenger-ship as master, or first or only mate, unless he holds a certificate of competency obtained at such an examination. The same requirement applies to engineers employed in steamships.

The master of every ship, excepting small coasters, is required to enter into a signed agreement—in a form prescribed—with every seaman whom he takes, setting forth the nature and duration of the voyage; the number and description of the crew; the time at which each seaman is to be on board or to begin work; the capacity in which he is to serve; the amount of his wages; a scale of provisions; regulations as to conduct; and such punishments for misconduct as the Board of Trade shall have sanctioned, and as the parties shall have agreed to adopt. In a foreign port, the agreement must be made in the presence of the consul; or other proper official, if in a colonial port. The discharge of the crews of foreign-going ships must be made before the superintendent, to whom the shipmaster must deliver a full account of the wages due each seaman, and of all deductions from them. It is enacted that no right to wages shall be dependent on the earning of freight; and that every stipulation on the part of the seaman for abandoning his right to wages, in the event of the loss of the ship, shall be inoperative. In an agreement with seamen, it is necessary to state the maximum period which the agreement is to cover, and the places or parts of the world, if any, to which the voyage is not to extend. There is provision as to the amount of space to be set apart for the accommodation of every seaman, as to the maintenance of the sleeping-places in a proper state of order and ventilation, and as to the supply of medicines for the voyage.

In the port of London is established a general register and record office for seamen, under the management of a registrar-general of seamen; and returns are required to be made to this official through the local marine boards, by masters of ships in the home and in the foreign trade, from which a general view may be had as to the state of the mercantile marine. Official log-books, in forms prescribed, are required to be kept in every

MERCHANT SHIPPING ACTS.

ship, except coasters, besides the ordinary log-book; and in these, entries must be made of numerous specified occurrences. Provision is made for punishment of offenses against discipline and good-conduct by seamen or by shipmasters; also for protection of the crew through an official survey of the ship, in cases in which a certain number of the crew are charged before a court with refusal to join their ship because of its alleged unseaworthiness, overloading, improper loading, or defective equipment. The Board of Trade may suspend or cancel the certificate of any master or mate if, after investigation, he is reported incompetent, or guilty of any gross act of misconduct, drunkenness, or tyranny; or if, after investigation, it is reported that the loss or abandonment of, or serious damage to, any ship, or loss of life, has been caused by his wrongful act or default; also under certain other circumstances specified.

Under the head of 'Safety and Prevention of Accidents,' rules are laid down as to boats and life-buoys to be carried by sea-going ships; and it is provided that the officers of customs shall not grant clearance to any vessel in default of compliance. Rules are given as to use of lights and fog-signals on board ships at sea; also the rule of the road for preventing collisions between ships. Ships which come into collision are required to exchange names, and give other information necessary for identification; and if, after the collision, one of the vessels does not stay by to give assistance to the other, it is deemed to have been in the wrong. Stringent provisions are made as to the build and equipment, and as to the surveying and certificating, of steam-ships. It is required that passenger-steamers undergo survey at least once a year. The Board of Trade is enabled to order any vessel to be surveyed, and after survey to declare it unseaworthy, and to make an order for its detention, or for its release on conditions. In such cases there may be appeal to the local court having Admiralty jurisdiction, the decision of which is final.

For provisions on sundry other subjects, see **PILOT: LIGHT-HOUSE: TRINITY HOUSE: NORTHERN LIGHT-HOUSES.** Also, see **LIEN.**

Careful provisions are made for thorough official investigation in cases of wreck, casualties, and salvage; and especially for investigation in regard to any master or mate whose conduct is in question.

Elaborate definition is made as to liability of shipowners in damages to persons carried, for loss of life or for personal injury, or for damage or loss of goods carried on the ship. The general principle is that shipowners are not answerable unless in case of their own actual fault or privity: but to this principle some proper exceptions are specified.

The final issue of Mr. Plimsoll's indefatigable labors was the law of 1876, Aug., in which provision is made for detection of unseaworthy ships, to prevent overloading, to secure that all deck cargoes shall be included in

MERCHANTS' MARKS—MERCURY.

the tonnage, and that grain cargoes shall not be carried loose in bulk, but shall be kept from shifting either by boards or bulkheads, or by being carried in sacks. The latter object was further secured by the act of 1880.

For the laws of the United States corresponding to British Merchant Shipping Acts, see NAVIGATION LAWS.

MERCHANTS' MARKS: in the middle ages, devices indicative of trades or occupations, allowed by the heralds to be borne by merchants, traders, and others to whom the proper use of heraldry was not conceded. A cutler might bear his knife, a tailor his shears, a mason his trowel and compasses. These insignia were in strictness ordered to be borne only in 'targets hollow at the chief flanks;' yet we often find them on shields, sometimes even impaled and quartered with arms. Merchants often bore, with a monogram of their initials, a mark composed of a cross and a figure resembling the numeral 4 turned backward—perhaps a symbol of the Holy Trinity, though it has been explained also to represent the mast and yard of a ship. The insignia of their companies were frequently borne by merchants in a chief above their marks, and occasionally quartered with them. These M. M. were the precursors of the trade brands and marks of our own time. Many of them are sculptured on the walls and roofs of the churches of the 14th c. and 15th c., and engraved on monumental brasses in England and continental Europe. Seals with M. M. are occasionally found appended to conveyances of land.

MER'CIA: see HEPTARCHY.

MERCIFUL, MERCILESS, etc.: see under MERCY.

MERCIFY, v. *mér'sī-fī*; or **MER'CIFIDE**, v. *-fīd* [*mercy* and L. *fīō*, I am made]: in OE., to pity; to have mercy on.

MERCURY, n. *mér'kū-rī* [Norm. F. *mercurie*—from L. *Mercuriūs*, in *anc. myth.*, the son of Jupiter and Maia, the messenger of the gods—from L. *mercārī*, to traffic—in his earlier statues Mercury holds a purse of money]: an elementary body, forming a metal white like silver, but in a liquid state at common temperatures, congealing or becoming solid at about 40 degrees below zero Fahr. (see below): a salt, a preparation of mercury, extensively used in medicine (see MERCURY AND MERCURIALS, below): one of the planets, being the one nearest the sun; a carrier of tidings; a newspaper; sprightly qualities in a man; a wild plant with rough ovate leaves, and green inconspicuous flowers—the *Mercuriālis perennis*, ord. *Euphorbiācēæ*. **MERCURIAL**, a. *mér-kū-rī-āl*, active; sprightly and gay; versatile; consisting of or containing mercury or quicksilver. **MERCURIALIZE**, v. *mér-kū-rī-āl-īz*, to affect the system with mercury. **MERCURIALIZING**, imp. **MERCURIALIZED**, pp. *-īzd*. **MERCURIALIST**, n. *-īst*, one under the influence of Mercury; one resembling the god Mercury in variety of character.

MER'CURY: see HERMES.

MERCURY.

MER'CURY, the Planet: see SOLAR SYSTEM.

MER'CURY, Dog's (*Mercurialis*): genus of plants of nat. ord. *Euphorbiaceæ*, having unisexual flowers, a tripartite perianth, 9–12 stamens, two simple styles, and a dry two-celled fruit with two seeds. The species are not numerous. The COMMON DOG M. (*M. perennis*) grows in woods and shady places. It has a perfectly simple stem, about 12 inches high, with rough ovate leaves, and axillary loose spikes of greenish flowers. It turns a glaucous black color in drying, and the root contains two coloring substances, one blue and the other carmine; so that it may probably become important in dyeing. It is very poisonous. The M. which some old writers mention as a pot-herb is not this plant, but *Chenopodium Bonus Henricus*.—ANNUAL DOG M. (*M. annua*) is a rarer plant, and less poisonous: the leaves are indeed eaten in Germany, as spinach.—A half-shrubby species (*M. tomentosa*), found in the countries near the Mediterranean, has had extraordinary reputation from ancient times; the absurd belief mentioned by Pliny being still retained, that if a woman after conception drink the juice of the male plant, she will give birth to a boy, and if of the female plant, her offspring will be a girl—the male plant, however, being mistaken for the female, and the female for the male.

MER'CURY, or QUICK'SILVER (symb. Hg, equiv. 200—sp. gr. 13.6): one of the so-called noble metals, remarkable as the only metal fluid at ordinary temperatures. It is of silvery white color, with peculiar metallic lustre. When pure, it runs in small spheroidal drops over smooth surfaces; but when not perfectly pure, the drops assume an elongated or *tailed* form, and often leave a gray stain on glass or porcelain. Moreover, the pure metal, when shaken with air, presents no change upon its surface; while, if impure, it becomes covered with a gray film. It solidifies at -40° , is slightly volatile at ordinary temperatures, and at 662° it boils, forming a colorless vapor of sp. gr. 6.976. Hence it is capable of being distilled; and the fact of its being somewhat volatile at ordinary temperatures helps to explain its pernicious effects on those whose occupations require them to come much in contact with it—e.g., makers of barometers, looking-glasses, etc. At a temperature of -39° , it freezes, when it contracts considerably, and becomes malleable. In consequence of the uniform rate at which it expands when heated, from considerably below 0° to above 300° , it is employed in the construction of the mercurial thermometer.

All mercurial compounds are either volatilized or decomposed by heat; and when heated with carbonate of soda, they yield metallic M. Native or virgin quicksilver occurs only in small quantity, usually in cavities of mercurial ores. Of these ores, by far the most important is *Cinnabar* (q.v.). There are two means of obtaining the metal from the cinnabar: the ore may be burned

MERCURY.

In a furnace, in which case the sulphur is given off as sulphurous acid, and the M. is collected in a condensing chamber; or the ore may be distilled with some substance capable of combining with the sulphur—e.g., with slaked lime or iron filings.

The M. imported is usually almost chemically pure. If the presence of other metals is suspected, it may be pressed through leather, redistilled, and then digested for a few days in dilute cold nitric acid, which exerts little action on the M., if more oxidizable metals are present. The M., after being freed from the nitric acid by washing with water, is chemically pure.

There are two oxides of M.: the black suboxide, mercurous oxide (Hg_2O), and the red oxide, mercuric oxide (HgO). Both lose all their oxygen when heated, and form salts with acids. The black oxide, though a powerful base, is very unstable when isolated, being readily converted by gentle warmth, or even by mere exposure to light, into red oxide and the metal ($\text{Hg}_2\text{O} = \text{HgO} + \text{Hg}$). The most important of its salts is the nitrate ($\text{Hg}_2(\text{NO}_3)_2 + 2\text{Aq}$), from whose watery solution ammonia throws down a black precipitate known in pharmacy as *Mercurius solubilis Hahnemanni*, from its discoverer, and consisting essentially of the black suboxide with some ammonia and nitric acid, apparently in combination. Of the *red oxide*, the most important salts are the nitrate ($2(\text{Hg}(\text{NO}_3)_2) + \text{Aq}$); the sulphate (HgSO_4), which is employed in the manufacture of corrosive sublimate; and the basic sulphate (3HgSO_4), which is of yellow color, and is known as *Turpeth Mineral*.

The haloid salts of M. correspond in their composition to the oxides. Of the most important of these—the chlorides—there are mercurous chloride (Hg_2Cl_2), well known as Calomel (q.v.), and mercuric chloride (HgCl_2), or corrosive sublimate.

Mercuric chloride, when crystallized from a watery solution, occurs in long white glistening prisms; but when obtained by sublimation, it occurs in white transparent heavy masses, which have a crystalline fracture, and chink with a peculiar metallic sound against the sides of the bottle in which they are contained. This salt melts at 509° , and volatilizes unchanged at about 570° . It has an acrid metallic taste. It is soluble in 16 parts of cold, and in less than three parts of boiling, water, and dissolves more freely in alcohol and in ether. Corrosive sublimate enters into combination with the alkaline chlorides, forming numerous distinct compounds. (A double chloride of ammonium and M., represented by the formula $\text{HgCl}_2 \cdot 2\text{NH}_4\text{Cl} + \text{Aq}$, has been long known as *sal alembroth*.) It combines with oxide of M. in various proportions, forming a class of compounds of great interest in theoretical chemistry, termed *oxychlorides of mercury*. On adding a solution of corrosive sublimate to a solution of ammonia in excess, a compound, which, from its physical characters, is termed *white precipitate*, is thrown down, which is generally

MERCURY.

supposed to be a compound of chloride with amine of M., $\text{Hg}_2\text{N}_2\text{H}_4\text{Cl}_2$. Mercuric chloride coagulates albumen, and combines with the albuminous tissues generally, forming sparingly soluble compounds. Hence, in cases of poisoning with the salt, the white of raw eggs is the best antidote; and for the same reason corrosive sublimate is a powerful antiseptic, and it is employed very extensively in antiseptic surgery, for cleaning surgical instruments and to preserve anatomical preparations.

Among the most important tests for this substance, which is frequently used as a poison, are—1. Potassium iodide, which, when added to a crystal or to a watery solution of the chloride, gives rise to the formation of a bright scarlet mercuric iodide. 2. The galvanic test, applied in various ways, of which the simplest is the 'guinea and key test,' devised by Wollaston. He placed a drop of the fluid suspected to contain corrosive sublimate on a guinea, and simultaneously touched it and the surface of the guinea with an iron key; metallic M. was deposited on the gold in a bright silvery stain. 3. Precipitation on copper, and reduction. To apply this test, acidulate the suspected fluid with a few drops of hydrochloric acid, and introduce a little fine copper gauze, which soon becomes coated with M.: on heating the gauze in a reduction tube, the M. is obtained in well-defined globules.

With iodine and bromine, M. forms two iodides and bromides, corresponding in composition to the chlorides. Both the iodides are used in medicine; the bromides are of no practical importance. The *subiodide* (Hg_2I_2) is a green powder formed by triturating 5 parts of iodine with 8 of M., and is of far less interest than the *iodide* (HgI), which is most simply obtained by precipitating a solution of corrosive sublimate by a solution of iodide of potassium. The precipitate is at first salmon-colored, but soon changes into a brilliant scarlet crystalline deposit.

Sulphur forms two compounds with M.—viz., a sub-sulphide (Hg_2S), a black powder of little importance, and a sulphide (HgS), which occurs naturally as Cinnabar (q.v.). *Mercuric sulphide* is thrown down as a black precipitate by passing sulphureted hydrogen through a solution of a mercuric salt (corrosive sublimate, for example). When dried and sublimed in vessels from which the air is excluded, it assumes its ordinary red color. The well-known pigment *vermilion* is sulphide of M., and is obtained sometimes from pure cinnabar, but is more frequently an artificial product.

M. unites with most metals to form Amalgams (q.v.), several of which are employed in the arts.

Of the numerous organic compounds of M., it is unnecessary to mention more than the fulminate (see FULMINIC ACID), and the cyanide (HgCy), which may be prepared by dissolving the red oxide of M. in hydrocyanic acid, and is the best source from which to obtain cyanogen.

MERCURY.

The uses of M. are so numerous that a very brief allusion to the most important of these must suffice. It is used extensively in the extraction of gold and silver from their ores by the process of amalgamation. Its amalgams are largely employed in the processes of silvering and gilding; and some (as those of copper and cadmium) are employed by the dentist for filling cavities in teeth. It is indispensable in the construction of philosophical instruments, and in the laboratory in the form of the mercurial bath, etc. It is the source of the valuable pigment vermilion. The use of mercuric chloride in anatomical preparations has been noticed above; it is similarly found that wood, cordage, and canvas, if *soaked* in a solution of this salt (1 part to 60 or 80 of water), are better able to resist decay when exposed to the combined destructive influence of air and moisture. The symbol Hg is taken from the Latin *hydrargyrum*, originally the Greek name, meaning "water silver."

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